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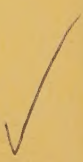
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THE BIRD OUR BROTHER



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THE BIRD OUR BROTHER

A CONTRIBUTION
TO THE STUDY OF THE BIRD
AS HE IS IN LIFE

BY
OLIVE THORNE MILLER



BOSTON AND NEW YORK
HOUGHTON, MIFFLIN AND COMPANY
The Riverside Press, Cambridge
1908

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Published May 1908

The ultimate end of this kind of study [of bird-life] is not simply the acquisition of facts, but it is to establish a human relation with these things out of doors, and to develop the sympathy and the love of the beautiful which is bound to come through a friendship established with any kind of organic life. — W. E. D. SCOTT.

The uplifting influence that birds may exert upon the lives of men constitutes to many their greatest value and charm. A growing appreciation of the æsthetic and the educational value of birds has sent many cultured folk to the woods and fields. . . . Possibly, however, the greatest boon that the study of birds can confer upon man is seen in the power of the bird-lover to keep his spirit young. — EDWARD HOWE FORBUSH, Useful Birds and their Protection.

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PREFACE

So much has been said of late about the characteristics and habits of the bird that it seems worth while to collect the testimony of persons who have studied the living bird, and thus to throw a strong light upon his life and his ways.

In this contribution to the better understanding of our interesting little brothers, I have aimed to admit no testimony except that of competent and trustworthy witnesses, taking it in many cases from the unimaginative reports of science, written with no thought of popular publication, and with equal care excluding the sensational stories current in the newspapers, which are usually unauthenticated and in many cases the offspring of a vivid imagination and an unscrupulous pen.

It will be noted that my own observations and conclusions — the result of more than thirty years of close and absorbing study of bird-life — are supported by the evidence of

others, every one, as I have reason to believe, an honest, truthful observer.

Although this little book has been written during the past few months, to meet what seems to be a pressing need, it is not a hasty collection. Because of my intense interest in the living bird and regret for the wide-spread ignorance of his real self which is met with everywhere, I have been for years collecting the sentiments and opinions, the experiences and observations, of other students of the bird as he is in life, parts of which are here brought together.

The book is intended solely for the "general reader," being not in the least technical, having nothing to say of anatomy or classification, or of the bird's place in the great scheme of creation. It is simply an earnest attempt to bring into compact form the information gathered, to present him as an individual, a fellow pilgrim in this fair world of ours. It does not profess to be the last word on the subject, rather it is almost the first effort, so far as I know, to present the living bird as he is.

These studies I now offer to the lovers of

birds who have a sincere wish for better acquaintance with the living, loving, enjoying, suffering little fellow creatures living among us though not of us, our neighbors yet almost strangers to us.

OLIVE THORNE MILLER.

LOS ANGELES, CAL., April, 1908.

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I

HIS INDIVIDUALITY

You may shoot and dissect them and study them as you would fossils, but a bird is a living thing, and you will never really know him till you fully understand how he lives. — W. WARDE FOWLER, *A Year With the Birds*.

Birds possess so many of man's mental attributes that the sympathetic student of their habits often, unconsciously perhaps, endows them with the mind of man entire. — FRANK M. CHAPMAN, article in *The Century Magazine*.

THE BIRD OUR BROTHER

I

HIS INDIVIDUALITY

THE history of man's relations with birds is a curious study ; from the days when they were regarded as so mysterious as to be supernatural and their least actions were thought to have a bearing on the fortunes of men, when they were exalted into gods and worshiped, down through the ages in which they have been considered the legitimate prey of the human race with no rights whatever, even to our day, in which we are just beginning to study them intelligently, as fellow creatures.

To study them intelligently we have even now first to divest ourselves of the old-time notion that birds—and beasts as well—are radically different from ourselves, that in place of the reason which governs, or should govern, our conduct, they possess only a blind instinct. Until we do this, they and their lives will remain a mystery.

“From hummingbird to eagle, the daily existence of every bird is a remote and bewitching mystery,” says Thomas Wentworth Higginson in “Outdoor Papers.”

Not until we come to see that the “lower orders” are closely related to us — weaker brothers, with rights and claims upon us — shall we be able to appreciate and understand them. That birds are individuals not unlike ourselves, that they possess many of our traits and characteristics, we are learning slowly, as we study them more intelligently.

Mr. Frank Bolles bears testimony to the fact that bird-study is of deep scientific interest, and countless secrets of nature await the real student, “for no lifetime,” he says, “is long enough to learn all about even one bird.”¹

Let me in the beginning define a bird-student as the term is used in this book. When I speak of bird-students or of observers, I do not mean the stroller who passes leisurely through fields and woods, pausing now and then to notice a bird more or less casually, while the bird on his part is perfectly aware of the scrutiny, and fully on guard, being no

¹ References are to citations in the Appendix.

more natural and unreserved in his actions than would be a person knowing that he was under observation by one who might any moment develop into a dangerous enemy. Such a person may be a nature-lover and even a charming writer. Still less do I mean by the term observer the technician who looks with murderous eye, whose trophy is a mangled body, to be dissected, measured, and weighed, to add figures to the already innumerable statistics. This is a student of anatomy and classification, and with neither of the two classes does this book concern itself. By a bird-student, or an observer, I mean one who gives hours and days and weeks and months to the closest observation of one bird or one species, watching to see how he lives and moves and has his being, what he eats and how he conducts his affairs—for he has affairs “even as you or I,” as interesting, as absorbing, as important to him as ours to us.

It is life, not death! It is a living, loving, hoping, working fellow creature, not a tangled mass of dead flesh and feathers that the student I speak of shall study. A student, as I understand it, is one who so far as possible

effaces himself, so that the bird under observation shall forget or ignore him, and shall proceed with his business or pleasures as if he had no observer ; and in addition to this close and patient study, shall make careful, and above all strictly accurate, notes at the moment of observation, and resolutely curb the temptation to impute motives and set them forth as facts. Such observers are rare as white blackbirds, but, as in the case of the blackbirds, such are occasionally to be found, and when one of that sort affirms anything, let no one less earnest and devoted question his statement.

We all know the story of Madam Merrian, who in writing her observations in South America, at that time little known by naturalists, mentioned a bird-eating spider, and in consequence lost caste and was characterized by the oracles of the day as untruthful and untrustworthy, yet who was completely vindicated in later years, when that country was studied by unimpeachable naturalists such as Bates and others, and the bird-eating spider found to be not at all uncommon.

This little story holds a lesson for the self-styled authorities of our own time, yet any

unusual and hitherto unknown fact or habit reported is sure even now to bring out the same old hue-and-cry of ignorance, "We have never seen such a thing! None of our books have recorded it! Ergo, it is not true! He is not to be believed!" This treatment is discouraging to the enthusiastic student, and not infrequently leads to the suppression of unusual observations by one who values his good name as an observer.

Among the many common errors about birds is this: that in manners and habits birds are exactly like one another. This is the first great mistake to combat. Nothing is more interesting or more surprising to a beginner in the study than the great variety he finds in their "tricks and manners," in a word their individuality.

Volumes of testimony to the individuality of birds from competent observers could be presented, from both English and American naturalists; and not only of individuality in character, habits, manners, and songs, but even in externals. In serious truth one may safely say that to the conscientious student of individual birds no two even of the same species

are counterparts, either in manners, characteristics, or external appearance, and a real observer very soon learns to distinguish the individual he is studying, from his neighbors of the same species, by variations in size, or peculiarities of plumage, even before his manners differentiate him from all others of his kind.

Says one authority, whom no rash mortal will venture to impeach, "It is known that all the different individuals of a species are not exactly alike, as though all were cast in the same die, as some naturalists appear to have believed."² And another says: "Every collecting ornithologist knows how rare it is to find two individuals whose color and measurements correspond exactly. Among hundreds of specimens of the same species, it is almost impossible to find two skins which agree so closely as to be indistinguishable."³ "A practical naturalist," says a third, "knows well that all birds and animals vary; and you will find as much difference, comparatively speaking, in the sizes and dispositions of a nest of young birds or a litter of animals, as you will in a family of human beings."⁴ Again, the

same author: "It makes the true naturalist feel very humble in spirit, when, after long years of patient observation, he sees the different creatures show themselves in most unlooked-for situations, and apparently new characters." ⁵

It is recorded in the books just what notes should compose the song of a sparrow, yet again, as a matter of fact, the true student finds that although there is always sufficient resemblance, there are variations, changes, and idiosyncrasies in the songs of individuals that render it impossible to make hard and fast lines in the matter.

Persons who have attempted to classify and reduce to our musical scale the songs of birds, have found this an insuperable difficulty, and the more closely the matter was studied the more impossible it has been found accurately to represent the wonderful variety in the songs of one species. The utmost that can honestly be said is, that all of a species ordinarily utter their notes in an approximately common way. "It will not do to say that the singers of any species sing exactly alike." ⁶

"It is nearly as difficult to find two thrush

songs that are identical as it would be to match two skins. Not only do separate individuals utter various phrases, but each has a repertoire of his own. There are differences of quality of tones, too, that are very noticeable.”⁷

“Every bird sings his own song,” says another who has made a study of this; “no two sing exactly alike, . . . the song of every singer is unique. There are, of course, similarities in the songs of birds of the same species. . . . For lack of intimate acquaintance with the music of a particular bird, we think he sings just like the next one. Why! do all roosters have the same crow? No; any farmer knows better than that. . . . Every individual sings his own song.”⁸

“Every trained field ornithologist discriminates individuality in song, and some have been so fortunate as to have noted wide and radical departures from what I have distinguished as the normal song.”⁹

Again, as to variation in habits, says Professor Herrick: “Bluebirds show their individuality in an even more marked degree. At one nest the female did all the work, while the male, which escorted her about and sang, always

showed the greatest timidity. At another, however, the conditions were quite the reverse ; not only was the male always the first to bring food, but his pugnacity reached an unexpected pitch in a bird whose gentle and confiding manners have been praised by many enthusiasts.”¹⁰

A friend of my own, and a careful student, once had the rare opportunity of studying three nests of the brown thrasher at the same time, and in a personal letter she assures me that the manner of her reception at each of the three nests was entirely different, showing variations of temperament which she considered remarkable in birds of the same species.

The keeping of birds in captivity by one of observing habits gives excellent opportunity for acquaintance with bird character. All intelligent and observing keepers of pets will corroborate these statements. My own experience of several years' intimate study of individuals in this condition first opened my eyes to the vast differences in the characteristics of birds.

No one of our time has had better opportunity for the study of individuality in bird character than Mr. Frank Bolles, who, as is

well known, kept several owls in captivity for years. His testimony is most valuable and not to be questioned.

Hear also the experience of a professional bird-keeper, who, after many years' experience, has written a book of instructions for the keeping of pets. He says: "No person except those who have kept birds and studied them carefully, could ever suppose or imagine the immense diversity of 'character' that exists even among the same species of our domestic and commonest feathered favorites. . . . I kept one canary eight years, alternately in solitude and society. He was a confirmed hermit in his tastes, preferring isolation to the charms of any companionship whatever. Alone, he was affectionate, lively, and content; in an aviary he made himself hated by the hen-birds, and bullied by those of his own sex. . . . His son, on the other hand, was merry and popular in a crowd of other birds of various kinds, . . . everlastingly feeding or being fed by his neighbors, personally investigating everything, copying the notes of the wild birds, singing from dawn till dark, and even after—for gaslight was always the signal for him to recommence

his droll antics and wake up the entire aviary." Of another canary he says: "She had an amiable knack of setting the aviary by the ears. She was full of tricks as any little winged imp." And again, the same writer says: "Some birds are fanciful to a delightful degree, and refuse altogether to sing if they object to the papering of the room in which the cage is hung."¹¹

A lady who has given us some charming books of minute and faithful studies of birds and beasts, Mrs. Effie Bignell, says of the two robins who were free in her house, that they were entirely different in every characteristic, one of them loving and gentle "like a perfect gentleman," while the other was greedy itself, with shocking table manners, and in every other way very different.

The curator of birds in the New York Zoölogical Park has made some interesting studies of the birds under his control, and bears emphatic testimony to their individuality. He says of cranes:—

"I once had the opportunity of studying four sandhill cranes which were as different in temperament as four birds could be. One, a male, was tame to a ridiculous extreme. It

would follow any person about and allow any liberty to be taken with it. A second bird, also a male, was a veritable fiend. He would fly and run fifty yards to attack any one approaching, and would inflict most painful wounds unless beaten off. He had to be thrown down many times with thrusts with a stiff branch before he would walk slowly away, not even then admitting defeat. His mate, a smaller bird, was still different. She imitated her lord and master in preparations for attack, and rushed in a very ugly way towards one; but when the critical moment came, she never dared to make a real attack, for she was an inveterate coward at heart. A fourth individual was stolid. He showed signs neither of tameness nor hostility, and acted as if all he wished for was to be let alone.”¹²

As an instance of the strong personality of birds, and to prove that they make selection of a mate by individual preference, the same observer tells this story: The drakes in the park were vying with each other for the favor of a little brown duck. One drake's tail-feathers and the curl above them had been shot off; the others were large and beautiful

birds. Nevertheless the pitiful attempts of the handicapped suitor to spread an imaginary tail prevailed. He was accepted, and the pair were afterwards inseparable.

And again, in the same paper: "The more I study birds [and birds are his life study] the more I become convinced that their intelligence has been greatly underestimated."¹³

A friend who had a pair of the small parrots called, from their caressing ways, love-birds, tells this amusing story of the behavior of a cardinal grosbeak whom she placed temporarily in their cage. They were all amiable and lived together pleasantly, with one exception. The grosbeak, a dignified bird, looked with disapproval on the sentimentality of the pair, and after observing them at their "billing and cooing" till his patience was exhausted, he would suddenly drop down from his higher perch right between them, of course scattering them right and left, and then return to his perch satisfied till they began again their fondling.

To show discrimination in colors is very common among birds. The captive robins mentioned never liked light colors nor figured

fabrics in their mistress's dress, and when a lady called wearing a camel's-hair shawl, both birds went into a panic, dashing wildly about the room and against the windows in a very unusual way. One of these birds delighted in a certain shade of yellow. He would alight on wool of this color in perfect rapture. On the contrary, a parrot of whom a friend told me hated yellow, and would scold and refuse to approach his beloved mistress when she wore a dress of that color, seeming almost frantic over it. Once when a mass of ends of worsted was given to him, he looked it over carefully and picked out all the blue bits, which he put in a pile away from the rest. Many well-authenticated cases are on record of birds showing choice in colors.

That birds have decided choice in mates is well known by those who have tried to mate them. Mrs. Brightwen of the Selborne Society of London, England, who has studied birds in semi-captivity for years, attempting to mate a pigeon, was forced to try two candidates before my lady was pleased. The first suitor she treated so badly that he had to be removed, but the second she accepted. Even

so thoroughly unnatural a bird as a canary shows decided notions in this matter, many instances of which could be given.

Even in infancy birds show decided character. Professor Lloyd Morgan, who has given much study to the instinct or intelligence of young birds by rearing them from an incubator so that they could never have had instruction from their parents, has made interesting observations, finding that "the difference in intelligence of young birds is very marked, always some are more active, intelligent, and mischievous." ¹⁴

Mrs. Irene Grosvenor Wheelock, author of several books, and a careful student of living birds in the nest, has found decided individuality in young bluebirds as early as ten days old. One would be gentle, easily pacified, and trustful, while another was fierce and resentful of captivity. ¹⁵

Richard Jefferies adds his testimony : " Birds have their fancies, likes and dislikes, and caprices ; " and Dr. George Harley, F. R. S., in a leaflet published by the Selborne Society, says : " Each individual bird, like each individual man or woman, appears to possess its

own inborn idiosyncrasies, not alone as regards its intelligence, courage, and tact, but in its tastes and proclivities;" and again: "Just as there are kind-hearted and cruel-hearted human beings, there are in like manner good and bad birds."¹⁶

The same is affirmed by Frank Bolles in a paper on "Individuality in Birds;" he says: "Individual birds of the same species have, in proportion to the sum total of their characteristics, as much variation as individual men. Of course, there is not nearly the same chance for individuality in birds as in men, for their methods of life and their mental qualities are simple, while those of men are complex."

He says that between his three barred owls there were individual differences in disposition, and that they stood out distinctly in his mind as three characters, just as three children or three horses would be distinguished. And again, of two horned owls in captivity he says: "To my eyes, the expressions of their faces were as different as they would have been in two persons of opposite temperaments." And again: "One summer I caught and caged three young sap-sucking woodpeckers as they were prepar-

ing to fly. . . . From the hour when I took these little birds away from their nest, I never failed to recognize each of them as having individual characteristics not possessed by the others.”¹⁷

“Those who look after birds kept in captivity are soon able to know each one unfailingly, . . . though they would often find it impossible to point out wherein the difference lay. Yet because the difference cannot be expressed in words, its existence is not to be denied.”¹⁸

Mr. W. E. D. Scott, already mentioned, says in an account of the blue jays at liberty in his bird rooms: “While certain characteristics seem to be common to all blue jays, a greater familiarity with them will sustain the assertion that they have much individuality.”¹⁹

A well-known and charming English writer using the pseudonym “A Son of the Marshes” says: “A pair of carrion crows would provide the most earnest observer with honest work of a by no means light character for a whole year;”²⁰ and further: “We who study them closely must, I am sure, honestly confess, that a great deal has yet to be learned about our small birds.”

As an instance of individuality in mischief, let me quote this little story :—

It was found that young teal were being killed by gulls ; an experienced keeper suggested that it was probably the work of a single gull. On watching, it was found that only one pair killed ducklings. This pair were shot, and no more young were killed. Another year duck-killing began and it was found that another pair were killing. On their being shot, no more ducklings were killed that season. The theory is confidently advanced that a few individual birds do the mischief for which perhaps the whole race is blamed. The individual criminal bird does his work stealthily and so is seldom observed. “The view that certain individuals among birds and mammals are responsible for most of the unusual depredations on other birds and mammals is held by many observers.”²¹

II

HIS INTELLIGENCE

Adequately to treat of the intelligence of birds, a separate volume would be required. — ROMANES.

It is scarcely too much to say that he who refuses to credit the lower animals with intelligence raises anxiety on the score of his own. — BREHM.

In our . . . inability to grasp and analyze sympathetically that psychic force which we call instinct, what remains for us but to judge discreetly and proportionately the mental processes of our little brothers . . . by the rules which order our decisions upon the operation of the human mind? — HENRY C. MCCOOK, D.D., Sc.D., LL.D., in *Harper's Monthly*, May, 1907.

We must always bear in mind that there is still much to learn about the lives of even those birds with which we are most familiar. — Dr. GEORGE HARLEY, in *Selborne Society Papers*.

II

HIS INTELLIGENCE

To the intelligence of birds there is ample testimony. In fact, in approaching the subject one is embarrassed by the mass of evidence which has been pouring in since men began to look upon the feathered world as something more than food for the gun, a check upon the ravages of insects, or subjects for scientific investigation.

The evidences that the lower animals are endowed with intellectual faculties are too many and too obvious to require argument, says a modern bird-student, and adds: "No definition of the moral faculties of man can be formed that will not include the faculties in the lower animals."

Dr. George Harley declares emphatically, in one of the publications of the Selborne Society of London, that "it is, I believe, true that our little feathered friends in many cases think, reason, feel, and act exactly as we ourselves do."

“Everything one says or thinks one hour or day,” says Edmund Selous, “is contradicted the next. There is little or no uniformity in the actions of birds. That is my constant experience.”²²

It is surely a proof of intelligence that birds learn by experience to take advantage of changed conditions to better themselves. Says Professor Headley: “To learn wisdom by individual experience is of the very essence of reason.”²³

The crow, as we all know, has learned much of the ways of mankind. Hawks have discovered that a passing engine scares up their prey, and that while one man is dangerous, a whole trainful is harmless. So hawks in some places habitually accompany a train, one of a pair flying on each side of the engine, and pouncing upon every creature that is thus disturbed.

The same is true of another bird, as testified to by an English observer: “On the railroad embankment you will see shrikes sitting in pairs at stated intervals, watching for prey. Trains do not frighten them. They seem to understand that the rumble and shake of the ground gives them food. The vibration . . . causes

the insects to dart from their shelters and then the shrikes are busy. So well known has it become to all insect-feeding birds that railway tracks are good hunting-grounds, that it is now a common sight to see rooks perched on the telegraph-posts, waiting for a train to pass. The moment it has gone by they dash off to feed. Even that most wary bird the green woodpecker will hunt along the line at certain seasons.”²⁴

Nor are our American birds less wide awake. Mr. Forbush says that even swallows, who seem to be the least observing of men’s doings of any bird, have learned that men walking through the grass start up insects, especially one which destroys immense quantities of meadow grass, and in one place at least, habitually follow any one passing through the fields to pick up the insects thus scared up.²⁵

We are all familiar with the changed habits of the chimney swifts, who long ago abandoned the use of hollow trees for their homes and resorted to the chimneys of men, and now, it is said, are gradually turning to barns and sheds for their building.

It is not perhaps so widely known, since it

is a somewhat later development, that woodpeckers are making discoveries to better their conditions. The redhead is cultivating the habit of a fly-catcher, and has become expert in securing his prey from the air, although he is plainly built for the more difficult labor of digging it out of a tree trunk.

The golden-winged woodpecker has discovered an easier way to prepare a nursery than following the laborious habit of his ancestors, the modern flicker cutting through the softer boards of our buildings and finding snug and safe quarters within. At one place the turrets of a Western college where I spent a summer were occupied by flickers, with English sparrows for tenants. How they managed the domestic arrangements inside I could not discover, but both birds used the same entrance, which was plainly the work of the woodpecker's pickaxe.

This bird has also abandoned the ways of his fathers in the matter of food, and now-a-days finds his provisions, or a large part of them, around the ant-hills on the ground. As many as three thousand ant skulls have been found in the stomach of one flicker.²⁶

Another of the intelligent family, the yellow-bellied sapsucker, gave up the laborious use of the pickaxe in food-hunting so long ago that he has lost the power of thrusting his tongue far beyond the end of his beak, which was a necessity in the life of his ancestors.²⁷

Woodpeckers are not the only birds intelligent enough to take advantage of opportunities to better themselves. At a certain place on the coast of New Jersey where seine fishing is common, the osprey or fish hawk has discovered that men—if not more expert than himself at his own trade—have at any rate greater success, and he has happily accommodated himself to the new conditions and accepted the services of men as his providence. When the time comes for drawing the seine, fish hawks place themselves on every available point of vantage, gathering from a distance all about, watch the scene with interest, and when the great struggling mass is drawn up onto the land, pounce upon the tempting display and carry off their catch without wetting a feather. They are not indiscriminate fishers either; they select the morsel they desire, the first choice being the tender Spanish

mackerel (or so it is reported), which certainly shows their good taste, as every fish-lover on the coast will admit.

More extraordinary still is the degree of intelligence thus stated by Professor Headley. He says: "Pheasants learn by experience to distinguish a rifle from a shot-gun. The former has no terrors for them, and they will feed quietly while the bullets pass over them. I have seen the same complete indifference to the noise of rifle-shooting in the great spotted woodpecker." ²⁸

Birds are not obliged to do as their parents do. They constantly learn by experience and alter their habits. "Most birds," says a modern British observer and writer, "are ready to vary their habits suddenly and *de novo* if they can get a little profit on the transaction." ²⁹

The intelligence of the jay family is shown by the experience of a naturalist who studied and photographed a nest of Canada jays in the West. The birds, at first very wild, finding that he did not frighten or disturb them, became so tame that the female would doze on the nest in the most unconcerned manner, when he was near enough to touch her, and

calmly feed her nestlings while his hand rested on the nest.³⁰

It is not so remarkable that game birds, through a long course of persecution at the hands of men, should develop the unusual intelligence which is exhibited by the scaup ducks in Florida. At Titusville, where no shooting is allowed along the water-front, "wild scaup ducks swim, dive, and dress their plumage as unconcernedly along the wharves and the beach at the hotel as if there were not a man in sight. They sometimes come ashore and walk about on the grass near the hotel. They swim at ease among the small craft at the wharves, and act much like domesticated ducks, but when the same birds get out on the river beyond the dead line where gunning is not prohibited they can hardly be approached within gunshot by a fast-sailing boat."³¹

Mr. Bolles gives an interesting account of an experiment he made with a great blue heron, which shows that the bird did not fear what was simply strange, but that which he had learned by experience was dangerous, as indicating the vicinity of man. After observ-

ing him as long as he cared to, Mr. Bolles began to whistle to start up the heron. (I should say that he was hidden, but quite near the bird.) The heron stopped dressing his plumage and looked towards Mr. Bolles's hiding-place with no fear, only curiosity. Mr. Bolles sang, but the bird only stared without moving. Then he tried animal sounds,—barking, mewling, etc.,—and at last came down to plain spoken English, supposing of course that the human voice would alarm him. But the bird remained in composure, evidently entertained and showing no desire to depart, till suddenly, in moving his foot, Mr. Bolles snapped a small twig, when like a shot the heron was on the wing.³² That sound he recognized, and experience had taught him to fear it because connected with the presence of man.

We have long been familiar with the fact that, upon the discovery of uninhabited islands, the birds making their homes there meet the invaders of their premises in the most friendly manner. Experience, however, soon gives them better knowledge of the average man, for the stories of the brutality with which

these confiding advances are usually met is enough to discourage one's faith in humanity.

Dr. Harley gives an interesting account of birds learning by experience the opposite lesson of confidence. "An instance of the confidence our native wild birds may be led to repose in man I witnessed at Walton Hall in Yorkshire when during the winter time I visited its squire, the well-known Charles Waterton. . . . Mr. Waterton was such a lover of the feathered tribe he never allowed a gun to be fired in his deer park, or any of the birds inhabiting it to be otherwise disturbed. The result was that during the inclement winter weather the twenty-five acre sized lake in it was crowded with all imaginable varieties of our native water-fowl, and so friendly were they that they . . . permitted Mr. Waterton and his visitors, me among the rest, to walk close up and to stand beside them. Yet these very same birds when outside of the walls of the domain would not allow any human being whatever to come so much as within gun-shot of them if they could possibly prevent it." And again the same writer says: "Captain Doughty of

H. M. S. Constance tells me that . . . on several islands of the Southern Ocean he found the tropical birds so little fearful of man's approach that he had not only walked up close to them while they were sitting upon their nests, but actually extracted from their tails the beautiful scarlet feathers without the birds manifesting the slightest sign of fear. Indeed all the notice they took of the procedure was to express their disapprobation of the act by turning their heads around and pecking at his hands while he pulled the feathers out. On no single occasion did they attempt to fly or even so much as to leave the nest." ³³

An interesting story of a bluebird's learning by experience was told me by a long-time student of bird-life in captivity in an aviary. She was the very efficient secretary of the Pennsylvania Audubon Society, and her truthfulness and correctness of observation are above suspicion.

She had two bluebirds, the male a cage-made cripple, incapable of freedom, but cheerful and contented in captivity, the female with wing-feathers injured so that she could not

fly. The two were kept in a cage together. They did not quarrel, but neither did they take much notice of each other, being apparently perfectly indifferent. After some weeks the female moulted and came out in perfect plumage, upon which the cage door was opened for her that she might have her freedom. According to the writers on caging birds, who usually know nothing about such cage life as this lady provided for her captives, the one thing for which all caged birds pine is freedom, and naturally they would suppose this bluebird would accept hers with delight.

(Lest I be misunderstood, let me here make my oft-repeated statement, that I do not approve of caging wild birds, that I never had a bird caught nor a nest disturbed for my study; but when birds are injured, or born in a cage, as the canary, or have been so long in captivity that they seem unable to take care of themselves, I think the kindest thing one can do is to make them so happy in captivity that they do not care for freedom, having learned the comforts of protection, shelter, and an unfailing food supply; and this can be done by one willing to take the

trouble. Nothing is more cruel than to force freedom upon a canary, which is often lauded as a righteous act, — a bird born in a cage, of caged ancestors, who knows nothing of outside life or of caring for itself. It is simply dooming the pet to a speedy death.)

Now let me resume my story. The captive bluebird did not hurry out upon this invitation, but after a while, almost as if accidentally, she stepped out of the door, and, after looking calmly around, flew into the garden, and finally disappeared. Her cage-mate then first showed concern. He began to call, and seemed so unhappy that his kind-hearted mistress was greatly disturbed.

A whole day went by, and the next afternoon the mistress was called to see a strange sight, — a bluebird trying to get into the cage, while the bird within was wild with excitement, and calling in the sweetest tones.

She hurried to the spot and found the wanderer trying to squeeze herself between the bars of the cage. The door was thrown open at once, and instantly the returned bird flew in, jumped upon a perch, and fell to a vigorous dressing of plumage. Then followed

a great chattering. "Nothing could be funnier," says the amused observer, "than her air of telling what a horrid thing it was to be free. She ate and drank, and seemed utterly content."³⁴

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Many instances could be given of birds returning to their cages after being set free, having learned to appreciate the comforts of warmth, protection, and plentiful food supply.

An English lady with whom I have corresponded has tamed many birds by taking them from the nest and keeping them till well grown, then opening window and doors to them, while still having always a supply of food ready for them. Thus she has on her grounds a colony of birds, who, while living and nesting outside, come freely into her house for dainties from her hand or to sing to her.³⁵

Mr. Robert Ridgway told me of a bird-lover in Florida who would not let birds be annoyed on his place, with the result that they became very tame. Cardinal grosbeaks, who are naturally shy and wild in confinement, became so familiar that they would take food from his hand.

From a lady in Michigan I have this interesting story of a robin who nested on her place four years. She was sure it was the same bird all the time, if not the same pair, for they acted exactly in the same way every season on their return from the South, showing perfect familiarity with the place and all surroundings at the first moment of their arrival. They were not at all afraid of the family, though very shy of strangers. Any one of the household could take up a young robin — when after the manner of robins it had come to the ground and seemed to lack courage or strength to return to a safer place — and replace it on a branch, and no notice would be taken by the elders.

One day a man passing by picked up from the ground a young one, on which the parents made great outcry, and the whole robin population of the neighborhood came to the rescue, scolding, crying, and flying at the thief. One of the family hurried out and claimed the bird as a “tame one,” when the man gave it up to her.

Instantly the clamor ceased; neighbors returned to their own domestic affairs, and the

parents resumed the feeding business, paying no attention to the fact that the youngster was still in the hands of a human being. It was curious that the robins of the neighborhood seemed also fully to understand that the infant was safe.³⁶

In countries where people are gentle and friendly with birds instead of persecuting them, they become very tame. Mr. Lafcadio Hearn, in his writings about Japan, says that the fearlessness of wild creatures is one of the most charming things about the remote parts of Japan "*yet unvisited by tourists with shot-guns.*"³⁷ Travelers who visit Norway tell us that birds, never being disturbed, come freely about the houses, and when it is cold they even come inside for food and warmth, and no one thinks of interfering with their comfort or their freedom.

The ingenuity of birds in overcoming difficulties or meeting accidents affords strong proof of intelligence. Many cases are on record of damages to nests repaired in strange and unusual ways, by putting additional stays to a stronger limb, drawing other twigs close about the nest and fastening them there; and

perhaps more striking was the way adopted by some swallows of treating a usurper who stole into the nest and would not be dislodged, collecting a flock of their neighbors, each bringing a beakful of mud, walling up the thief, and leaving him to perish.

Mrs. Treat tells the story of a pair of bluebirds who nested on her place one summer. When the second brood was hatched, the English sparrows annoyed the parent bluebirds exceedingly by going to the box and looking in, even having the audacity to attempt to feed the young bluebirds. In this dilemma, the birds called together their first brood, — elder brothers and sisters who had been gone for weeks and were by this time as large as the parents. These young birds kept guard while the elders were away in search of food, for several days; the house was scarcely left for a moment. One of the family was constantly present to dart at the sparrows whenever they made an attempt to come near, until the young left the nest.³⁸

The storing of food, as well as the discovery of a new food, is an evidence of learning by experience; indeed the importance of the food

supply develops the intelligence perhaps more than anything else.

The favorite word "instinct," the shibboleth of many writers, does not explain all the facts in the following case, for not all the species have the habit mentioned, though all must have instinct. In Florida, the red-bellied woodpecker has earned the name of orange-borer because a few of them have learned to get at the delectable sweets of that fruit, heretofore securely hidden from the tongues of our little brothers. Once having acquired the taste, however, their sharp beaks will open a new world of enjoyment to them. At present, even where the birds are abundant, only a few have acquired the habit, which is quite a recent one.³⁹

A species of crow in India, says Houssay, knows what is meant by a thread of smoke; it means a Hindu family cooking, since no fire is needed for anything else in that hot country. So when a crow sees smoke, he summons some of his fellows, and they proceed to the fire. The Hindu is accustomed to throw outside all food left from the meal, and this the birds have learned to expect.⁴⁰

Some red-headed woodpeckers in South Dakota, preferring their meat fresh, evolved a way to keep it so which compares favorably with the "cold storage" of man. One bird stored nearly one hundred grasshoppers in a long crack in a post. All were living when discovered, but so tightly wedged that they could not escape, and during the long winter of that region it is to be presumed the prudent bird had his provision. The observer found other places of storage full of grasshoppers, and discovered that the red-heads lived upon them nearly all winter. It has been found that in Indiana beechnuts are prudently gathered by these woodpeckers and stored for the inclement season.⁴¹

(No assurance of the intelligence of the crow family is necessary at this late day. Some writers, indeed, maintain that they surpass all other birds in brain development. This story Major Bendire relates as coming under his own observation:—

The Major had a fine setter dog who was accustomed to take his daily bone, with due allowance of meat adhering, to the lawn to enjoy at his leisure. On one occasion the

Major observed several magpies planning to get a share of the dainty. They quietly approached the dog and placed themselves one at the head, about two feet from the animal, who was too busy to notice them, a second near the tail, and one or two by his side. When all were placed, the bird near the dog's tail gave a sudden nip to that member. The dog, of course, wheeled to catch the offender, who fled, while his hungry comrades rushed to the bone, hastily snatching what they could. The fleeing bird led the outraged dog to some distance, drawing him on by fluttering as if injured, without really taking flight.

When the animal gave up the chase, perhaps remembering his dinner, the feasting magpies quietly withdrew, till he was again absorbed in eating, and then repeated the manoeuvre, arranging themselves differently, as the Major could tell by differences in size and plumage, such as length of tail, injury to some feather, etc. The bird who had officiated as the tempter to draw the dog away so that his fellow conspirators might enjoy the food now took his stand at the head of the enemy, and was first at the feast when one of his fel-

lows had a second time beguiled the animal into a chase. This little drama was enacted several times, to the surprise as well as the amusement of the observing Major.⁴²

Instances of learning by experience that will occur to keepers of birds in semi-freedom in a house are innumerable, such as a bird finding his water dish empty, going with great demonstration to it, pretending to drink, and then looking up with great significance to his provider, a thing which has often happened in my bird-room and has been remarked by others also.

And, again, the way a parrot solved a problem shows something beyond instinct, and is vouched for by the lady who owned the bird and told me the story. The bird had two play-things of which he was very fond, an ivory ring and one of his own dropped feathers. Wishing to get down a flight of stairs, and to carry both of these treasures, which he could not do at once, the bird dropped one of them down one step, then the other likewise, then hopped down himself, repeating this performance till he reached the next story.

Many evidences of intelligence would be

set down as instinct, such as the fact, related by Mr. Muir and also mentioned by Major Bendire, that in years in California when rainfall is insufficient to secure a good food supply, quails, "prudently considering the hard times," abandon all thoughts of pairing and continue in flocks all the year, not attempting to rear young.⁴³

What is it but intelligence that teaches birds that the observation of human beings is dangerous to them, and shows them instantly whether or not a man is observing them? Every student of living birds must know this is a fact, but let us have the testimony of a famous student, first asserting that American birds are not a whit less knowing than their brethren across the water.

"Walk across a meadow," says this delightful writer, "swinging a stick, even humming, and the rooks calmly continue their search for grubs within thirty yards; stop to look at them, and they rise on the wing directly. So, too, the finches in the trees by the roadside. Let the wayfarer pass beneath the bough on which they are singing, and they will sing on, if he moves without apparent interest; should

he pause to listen, their wings glisten in the sun as they fly.”⁴⁴

In my many years' study of the ways of birds I have often noticed the same thing. I have seen birds go on with nest-building, even with feeding and other birdy occupations in perfect freedom, coming and going freely, chatting together, and singing as calmly as if no human beings were near, almost within touch of a party of loungers on a piazza, or of a constant stream of passers-by, while the direction of attention to them, or the pausing a moment to look at them, sent them off on the instant in a panic.

“The most rational kind of pleasure experienced by the ornithologist in studying habits and disposition,” says Hudson, “no doubt results in a great measure from the fact that the actions of the feathered people have a savor of intelligence in them. Whatever his theory or conviction about the origin of instincts may happen to be, . . . it must seem plain to him that intelligence is in most cases the guiding principle of life, supplementing and modifying habits to bring them into closer harmony with the environment and enlivening every day

with countless little acts which result from judgment and experience, and form no part of the inherited complex instincts.”⁴⁵

Instances of intelligent actions and the opinions of capable observers could be multiplied almost indefinitely, but I will conclude the subject with two or three more corroborative quotations.

Says Professor Shaler: “Accustomed as they are to ceaseless intercourse with each other by means of their varied calls, largely endowed with the faculty of attention, and provided with fairly retentive memories, birds are, on the average, nearer in the qualities of their intelligence to man than are many of the species in his own class.”⁴⁶

And from Dr. McCook, the lifelong student of insect life: “When we see such striking resemblances between the conduct of social ants and that of men, is it unreasonable to suppose therefor some small degree of likeness in psychic origin? Or, is it required, in order to support the dignity and superiority of man, that we should deny to insects upon their vastly narrower sphere of activity, anything like analogous psychic impulses?”⁴⁷

And lastly Sir Edwin Arnold : "The possession of gifts so clearly akin to human feelings, duties, and virtues ought to render animals dearer and more sacred to us than they are. I doubt whether we have the right, knowing all we know, . . . to treat these living, sentient beings as if they were automatic property without rights or relationship to ourselves." ⁴⁸

III

HIS LANGUAGE

The language of a wild bird is as necessary to him as the language of a wild man is to him. — CHARLES A. WITCHELL, *The Evolution of Bird-Song*.

The varieties of bird-speech and the possibilities of interchange of ideas are very great. — C. J. CORNISH, *Animals of To-day*.

The evil success with which poachers can imitate the cries of love and defiance of denizens of the woodlands proves that its inhabitants possess a vocabulary which can be stolen. — A Writer in the *London Telegraph*.

III

HIS LANGUAGE

“To know the sense the words impart,” says our clear-headed poet Emerson, “you must bring the throbbing heart.” In no study of nature is the throbbing heart—the love and sympathy—more important than in the study of birds.

Some students of the bodies of birds, their anatomy and classification, who never leave a bird alive long enough to see anything of its characteristics, have asserted that the students of living birds interpret their actions unfairly,—humanize them, they say,—and have consequently set them down as unworthy of belief.

Conscientious students of life learn to be less dogmatic in their opinions. The deeper they study into the mysteries constantly presented to them, the more they appreciate their ignorance, and the more modest they become in settling the problems that open before them. Those who really know birds alive and

free are amazed at the resemblance between their characteristics and our own, at what, indeed, we may call their "human nature."

Birds, as every close observer will testify, utter many low, disconnected notes which, for want of another term, we must call talk. It is not assumed that they have an articulate language, nor that they converse as we understand the term, but they are certainly able to communicate with their fellows by means of these conversational-sounding utterances. When, therefore, I use the terms "talk" and "conversation" I wish to be understood as referring to those as yet unexplained sounds, and not to birds taught words of our language, as parrots, cockatoos, and others.

Spring is the time to study the language of birds, for in that season of love-making and nursery duties all the varied emotions of their lives are called out. Unlike the rest of the year, they are bound to one place; they cannot fly from unpleasantnesses; they must stay and meet them. The importance of selecting safe places for nesting, the constant watch for enemies, the many dangers that threaten, make these anxious days, and bring out char-

acteristics seen at no other time. When sitting is over, there is a nursery full of helpless nestlings to rear, to protect from accidents, to provide with food, to instruct in the path of life. All these make spring the most serious and eventful, as well as the most interesting, season in their lives.

At this time the conversational abilities of our little brothers are in full play, and they are far greater than is usually supposed. Besides the well-known calls and songs which every one may hear, there are many low notes with the mate and the young that are heard by a sympathetic bird-lover alone, which almost force him to the conclusion that they are exchanges of sentiment — talk, in fact. No one who has closely studied individual birds at this period in their lives can doubt that they have some sort of language.

For what are the voices of birds —
Ay, and of beasts, — but words, our words,
Only so much more sweet ?

says Browning.

One need only sit quietly and unobserved in some good birdy place, and listen patiently to the many odd little sounds, the conversa-

tional utterances, the squeaky notes of nestlings, the reproving or reassuring or admonitory tones of the grown-ups, the quite different notes of elders between themselves, all in undertones and by no means meant for the world at large, to be sure that some sort of communication is going on, that it is a family scene one is overhearing, and to feel like an eavesdropper. Let him move or show himself, and note the instant change from all intimate family life to the putting on of "company manners." Such experiences I have often enjoyed behind the blinds of a lonely farmhouse, or in a carefully arranged nook under low trees or among bushes, having quietly established myself while the birds were away.

One such incident comes to my mind. Sitting behind the blinds of my farmhouse window, I was attracted by a curious succession of notes in the voice of a phœbe, but very low. That of itself was interesting, even noteworthy, for that bird is not usually garrulous. The notes sounded conversational, and were almost continuous, while at every pause, another voice uttered a single note in a querulous, complaining tone. Cautiously looking

out, I discovered on a leafless sapling near my window the two birds, an adult phœbe and a young one apparently lately out of the nest. The elder kept up a running talk, occasionally darting out after a passing insect, which — I was surprised and amused to see — she carried to the little tree, and, after the youngster had seen it and opened its mouth to receive it, she swallowed herself! upon which the youth uttered a wailing cry. Then would come another long talk and at every pause a complaining note from the infant. Several times these performances were repeated. Then the elder flew away; when at once the little one began to look out for himself, actually flying out, and once or twice while I looked succeeding in securing his prey.

Could anything be plainer? He was receiving instruction in the art by which he was to get his living, and if the peculiar notes of the parent and the querulous ones of the young were not some sort of communication between them, they looked remarkably like it. Until one has enjoyed such glimpses into the private life of birds, he cannot appreciate that side of them.

Some slight advance has been made in understanding the language of those unwelcome neighbors of ours the English sparrows. A writer who had a pet of this race in a cage hanging in a window made a study of his talk with the wild sparrows outside, interpreting it as well by his actions. In this way he claims to have learned eleven different expressions, such as inviting other sparrows to approach, welcoming them, urging them to remain; and, with his human neighbors, a great desire for anything, coaxing, surprise, alarm, scolding, anger, satisfaction, and delight,—this last when a fly was presented to him.

“A practical acquaintance with shore shooting and the men who have learnt to imitate the notes of shore birds,” says Mr. Cornish, “discloses some curious facts as to the minute differences between the ‘talk’ of different species. The greater number have a particular note which signifies ‘Come.’” By imitating his peculiar note, the gunner can draw down a bird of any species desired from among those of another kind.⁴⁹

A gunner of whom Mr. Cornish writes saw two or three golden plover in a large mixed

flock of birds and gave the golden plover call, when out of the flock of some sixty birds the pair of golden plover instantly wheeled and passed close by, answering the call in their own language. And again, he relates another incident: "Perhaps the best instance of a man speaking bird language is a fowler who shot the only specimen of the broad-billed sandpiper ever killed in Norfolk. He was listening to the notes of the shore birds and noticed one which he did not know. He imitated it, the bird answered, flew up to him and was shot." ⁵⁰

"The blue jay," says Dr. Coues, "when hopping aimlessly about or peering cautiously down to watch a suspicious character, talks to himself in a queer way, as if thinking aloud and chuckling over some comical notion of his own."

Dr. George Harley, quoted in a preceding chapter, by close study of individual birds reached this conclusion: "that birds possess an intelligible language in which they can communicate their ideas to each other, and that a bird can persuade another bird to follow a particular line of action." ⁵¹

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The American crossbill is one of the most social of birds; a party of them are constantly talking together. Even the demure bluebird can talk on occasion. I have not only listened to much talk about the nest, but I have heard one engaged in disputing possession of a particularly desirable feeding-ground pour out, between furious encounters with the enemy, a constant torrent of low conversational notes.

The common chickadee is overflowing with chatty talk very different from his call and his song. I have heard one give a long harangue, to which his comrades listened in silence and on its conclusion broke out into a storm of similar notes themselves. Sea-birds who congregate in vast colonies are notorious for the chatter they keep up. And who can doubt that the common crow is able to communicate his emotions, and more, his plans, to his fellows.

Says a late English writer who is a close observer, speaking of rooks, who are related to our crows: "One feels that every note uttered by rooks is expressive; there are sounds which just miss being articulate and just evade one's efforts to write them down." After giving a

list of more than thirty distinct notes he had marked, he says: "It is but a small page out of the vocabulary, but it may perhaps serve to draw attention to the great powers of modulation and inflection which these birds possess. To me it has often seemed as though these birds were really in process of evolving a language."⁵²

No one will question the assertion that birds can scold. Orioles are the most proficient in this accomplishment of any birds I know, especially the orchard oriole, who can hardly deliver his sweet song without the interpolation of scolding notes. The world seems to be all wrong with this fellow mortal; even his wooing is a rather savage affair and conducted with many hard words. His little mate has plainly learned how to manage her domineering partner, for in the cases of the several I have known she never "talks back" but goes quietly on and has her own way in spite of his blustering.

"Birds have almost invented a language," says Professor W. Warde Fowler. "Their voices are not really inarticulate. Each species has its own tongue, in which the sexes dally

and converse and communicate with each other.”⁵³

Maurice Thompson adds his testimony: “All our birds use what we call their voices, just as we use ours, for the purposes of expression generally.”⁵⁴

John Burroughs also is quoted by Mrs. Wright as saying: “Birds have a language which is very expressive and easily translated into the human tongue.”

“If ever birds talk together, starlings do,” says Richard Jefferies. “Many birds utter the same notes over and over again; others sit on a branch and sing the same song: but the starling has a whole syllabary of his own, every note of which evidently has its meaning and can be varied and accented at pleasure.”⁵⁵

“The notes of the raven are extremely varied,” says Turner, “to express surprise, danger, satisfaction, or nearly anything else, as they convey much by their note. Two will get close together in early spring and talk to each other for half an hour.”⁵⁶

“And then the English sparrow,” says Dr. Van Dyke. “What an insufferable chatter-box! I am convinced that he talks altogether

of scandals and fights and street-sweepings." If we put this opinion of the genial doctor down to poetic fancy, we certainly cannot so class the serious statement of Professor Shaler of Harvard University. Our common fowls, he says, "are in constant and effective communication with one another." And again: "So nice and well understood are the differences between the sounds which these birds give forth, and so well are their notes appreciated by their companions, that the creatures may well be said to have a language. Though it probably conveys only emotions and not distinct thoughts, it still must be regarded as a certain kind of speech."⁵⁷ Crows and their kindred, he says again, are extremely sensible creatures, endlessly engaged in chattering communications with each other.

The most convenient place to observe the language of our fellow creatures in feathers is with our domesticated species. Several persons have made careful studies of the language of fowls. One man has progressed so far in the vocabulary of the poultry-yard that he professes not only to understand them, but to be able to converse with them. I can

testify from having heard him that he can talk hen language as well as the hens themselves. Professor Asger Hamerik, of the Peabody Conservatory of Music in Baltimore, composer of Norse symphonies, asserts emphatically that hens have a well-defined language.

I have never given much attention to this class of birds, but I have always recognized their individuality, and once or twice have observed a significant little scene. On one occasion my windows opened into an orchard frequented by the poultry of the place, and two or three little things happened before my eyes which seemed to indicate a language. A hen with thirteen chicks adopted a spot near the window for a resting-place. Several times during the day she would assemble her downy brood and cuddle them under her wings for a rest.

Now thirteen is a large number for one small mother, and crowd as they would some of them were often left only half covered. These outsiders would occasionally stray away and begin picking about in the grass. When this occurred the hen called out in an impera-

tive tone, very different from her ordinary cluck, a remark of six notes, upon which the stragglers hurried back and struggled for place under their feather bed. It was plainly a command to return, and they understood it perfectly. When they had rested long enough the mother rose with a single note and started off with her family.

That brooding-place was in a path much frequented by the hens, leading from the stone wall where they entered to a grape trellis where they spent much time. And I saw other scenes still more significant. On one occasion a hen came over the wall and started for the favorite rendezvous. The family group was directly in the path, and to pass them she had to turn out into the deep grass, so she passed quite near. The mother uttered a warning sort of remark in an excited tone, upon which the other answered in a quiet, low-toned speech, exactly as if she had said, "Don't be alarmed; I shan't touch them," and went on.

The next moment a hen came dashing around the corner from the other side, as if she were pursued, and evidently on her way

to the wall crossing. She came almost upon the family before she saw them. Then she stopped as if shot, uttered a rather long harangue in a high, strained voice, and turned and departed, talking all the way in the same tone. I could not resist the impression that she was complaining that the mother had no right to obstruct the common way and compel others to go round.

Birds express themselves very well without words. It is remarkable how little at this late day we understand the ways in which birds show their emotions. Every part of them is expressive,—the tail, the wings, even the very feathers, which are raised or flattened at will, on different parts of the body. Some years ago I had a red-winged blackbird whom I rescued from the discomforts of a bird-store, and having nursed him through an illness, I became personally well acquainted with him. At last I felt obliged to dispose of him, and as he was not capable of caring for himself in freedom, I gave him to a friend.

When I removed the cover of the cage in which I had carried him to her, and he found himself in a strange place, he came as near me

as he could get in the cage, fixed his eyes on me, lifted *one* wing and held it up trembling all over, while he addressed me in a very low but earnest voice, uttering a long string of notes in a conversational tone, such as I never heard from him before. I was astonished, and I must say moved, for I could not resist the conviction, which his whole manner conveyed, that he was reproaching me for removing him from his home and abandoning him to strangers.

Many more confirming statements could be added to this chronicle, but enough has been said, I hope, to arouse interest in the subject and to stimulate the study of future observers, and I will close the subject with the opinion and advice of an unknown writer in the London Telegraph :—

“It is not safe for man to think and call all these strange families of the silent world alike dumb, or to despise them for being free of grammars and dictionaries. It is obvious that some power of mutual communication assuredly comes to all creatures that live in societies. Nobody can watch a flock of birds . . . without perceiving that they know each

other's minds in some way or other in a very satisfactory manner. . . . It would be more desirable to learn what they talk about than to discuss the problem whether they talk at all."

IV

HIS ALTRUISM

There is nothing in the lower animals corresponding to human selfishness; whatever there is in them of violence is the following of a divine intent: human vices have no counterpart in their development. — HENRY MILLS ALDEN, *God in His World*.

Birds in general are resolute in defending any one of their number when attacked. . . . Almost all the gallinaceous birds are ready to risk their lives in behalf of any of their species. — WILSON FLAGG, *Atlantic Monthly*, September, 1879.

One of the delightful things about our own species is its colossal conceit. Until very lately it would scarcely have occurred to us to doubt that we were the central figures of the universe, and that our fate was the chief concern of the gods. With an equally naïve self-satisfaction we have quietly arrogated to ourselves the sole possession of a moral sense. We cannot deny to our animal cousins the possession of the primitive virtues, — affection, courage, loyalty and faithfulness to the death, — but we do deny them the moral credit for them, on the ground that they are the result of “mere instinct.” — WOODS HUTCHINSON, *Contemporary Review*.

IV

HIS ALTRUISM

THE subject of the altruism of animals has been treated by a writer in a scientific journal, who asserts that the animal is superior to man in that quality. "Animal societies," he says, "are less polished but, all things being equal, are more humane than our own."

Some one, complaining of Audubon's saying that pigeons are possessed of affection and love, declared that that claim for them raised them to a level with man, upon which Audubon exclaims in his journal: "O man! misled, self-conceited being, when wilt thou keep within the sphere of humility that, with all thy vices and wickedness about thee, should be thine!"⁵⁸

The friendliness of birds for one another, for people, and even for animals, is of great interest, and innumerable well-authenticated instances can be produced bearing on the point. I can give space to but few.

A familiar and oft-quoted case of altruism is that given by Thomas Edward, a well-known

Scotch naturalist, and related in his life by Smiles, of a tern wounded by a shot so that it could not fly. When it was in danger of being secured by him, two of the flock came down, and bore it away beyond his reach.

This is not a solitary case so well authenticated as to be unquestioned. Mr. John Lewis Childs tells in the *Auk* a similar instance of a shrike he shot in Florida. The bird flew and tried to alight in a tree, but was unable to do so and fell to the ground. As Mr. Childs approached to capture him, the bird struggled up and fluttered away with difficulty, uttering a cry of distress. "Immediately another of his kind darted out of a tree, flew to his wounded companion, and circled about him and underneath him, buoying him up as he was about to sink to the ground. These tactics were repeated continually, the birds rising higher and flying farther away till they had gone nearly out of sight and safely lodged in the top of a tall pine tree. I did not pursue the bird farther," he concludes, "feeling that such devotion and intelligent assistance on the part of the second bird was worthy of success." ⁵⁹

A lady whose word I have no reason to doubt told me of the case of a Baltimore oriole who must have received similar assistance from others. The bird's wing was badly broken, so that he could not fly at all. He was picked up, and his captor, not knowing how else to help, placed him in a comfortable position in an attic, with the windows open, in the hope that outsiders would feed him. On going up a little later to see how he fared, she found no bird there, and after searching the premises thoroughly she saw him on a tree near the window, accompanied by a small flock of other orioles. He must have been carried out or, at any rate, greatly assisted. There could be no other explanation.

The cries of distress of any bird, as sportsmen and collectors, as well as bird-students, well know, will always bring others to their aid, and those not only of their own species but any fellow creature with wings. I have seen many instances of this sympathy, and so no doubt has every other student of the living bird.

Captain Brown tells of a tame stork unable to fly and living with poultry in the yard.

Wild birds, for some reason we cannot guess, —“some good birdy reason,” as Sir Edwin Arnold says, — seem always to resent tameness in others of their kind, and when wild storks attacked this one, whom they doubtless considered a degenerate brother, the whole feathered population of the place flew to his assistance; hens, geese, and ducks rallied around him and forced the intruders to retire.⁶⁰

The American crow, popularly considered the possessor of all the vices of mankind, with some original ones thrown in, is, on the contrary, as testified by those who have observed him closely and honestly, a very much misunderstood fellow creature, being the possessor of many estimable qualities, in which unselfishness and *esprit de corps* are conspicuous.

Illustrating this quality of the crow of unselfish consideration for his fellows is the story told by Mr. Rhoads of the common bedtime custom of these birds. It is well known that crows, as well as some other birds, however they may scatter abroad during the day, come together in the evening in a se-

cluded grove or piece of woods, and pass the night sociably in immense crowds. It is asserted by Mr. Rhoads, and confirmed by other observers, that the birds come from all directions in flocks of varying size, and collect in a field or convenient place near the roost, and not until all have arrived do they rise together, as if on a signal, and settle themselves in a black cloud on the trees of the roost. Says Mr. Rhoads: "Many crows in approaching the place of preliminary gathering necessarily fly over the roost, but not a bird enters it until the general movement begins after sunset. The self-imposed discipline and obedience of such an army"—a good many thousand, it is estimated—"puts to shame the strictest military code. Think now of a weary crow, which, having winged his way thither a distance of twenty miles, arrives about sunset at the roost, but, the ingathering not having yet begun, flaps on to join his brethren, who have settled half a mile farther off to gossip and plume themselves before retiring." ⁶¹

The kindly disposition of the blue jay, another much maligned bird, is testified to

by Mr. Scott, who, having kept them in his laboratory among many birds of many species, is certainly qualified to judge. He says: "From my relationship with blue jays out of doors and a greater intimacy established with those who are members of the bird family in my laboratory, I am inclined to believe that they are not only sincerely affectionate, but their disposition towards other birds, birds in general, is a kindly one. Wanton attack on the part of a blue jay upon other birds with which I have associated him, I have never witnessed. I believe the blue jay to be one of the most kindly denizens of the forest." ⁶²

Sidney Lanier tells of a mockingbird six weeks of age being kept in a cage with another young bird who was so ill he could hardly move. One day food happened to be delayed in coming, and Bob got furiously hungry. He called and screamed and made a great row. At last it appeared, and he took in his beak the ball of egg and potato, snatching it out of the hand, and then, instead of eating it, ran across the cage and gave the whole of it to his sick friend. ⁶³ And the mockingbird, as bird-students know him in freedom

and grown up, is not at all sentimentally inclined towards his fellows. On the contrary he is self-assertive and usually the dictator of the neighborhood he considers his own.

A similar case, showing the protective instinct of a skylark, is related by Buffon. He had a skylark so young she could hardly feed herself, when a brood of four younger ones were brought to him. The elder bird at once adopted the party, nearly her own age. She nursed them night and day, warmed them under her wings, pushed food into their mouths with her beak. If taken away she flew back as soon as she was free, making no effort to escape, which she could easily have done. She was so interested she literally forgot to eat and drink, and at length she died, consumed by this sort of maternal passion. The young ones died after her.⁶⁴

It would be easy to fill a volume with authentic cases of the generosity and kindness of birds to others of their kind, when caged, disabled, or in distress. An old gentleman in New England told me of a case he once observed. Noticing a little flock of chewinks or towhee buntings who came about the house

for food that was thrown out, he saw that one was larger than the others and that they fed him. To satisfy his curiosity he threw a stone with such accuracy that his victim fell, and on picking him up he was surprised to see that the bird's mandibles were crossed so that he could not possibly feed himself. The inference was obvious: his comrades had fed him, and so well that he had grown bigger than any of them.

Mr. Frithof Kumlien, of Milwaukee, Wisconsin, relates this little tale, adding that if not showing reason it certainly shows a degree of sympathy and kindness worthy of imitation by animals of a higher order. This is the story: His attention was attracted by peculiar calls of a blue jay which were answered from trees around. The calls were so suggestive that he went to the place and found an old blue jay on a fence, and several others in a tree at some distance. On nearing the bird the cries changed from low, pleasant tones to those of shrill alarm, which became more frequent as he appeared. He found the bird old, helpless, and nearly or quite blind, eyes almost closed, claws worn, bill dulled, and plumage

ragged. Every feature suggested old age and helplessness. Yet he was cared for and watched as tenderly as was ever a young bird in nest. The observer saw him often after that, and never did his comrades desert him. They fed him and regularly guided him to a spring where he bathed.⁶⁵

Every close observer must have seen birds feeding nestlings not of their own species. I have several times seen instances of this and have heard of many more. Mr. Baskett tells of an unmated cardinal grosbeak who helped a pair of blackbirds feed their young.⁶⁶ When Professor Herrick put two young kingbirds into the nest of a strange pair, they adopted and cared for them as well as for their own.⁶⁷

Birds in captivity, where they can be observed, often show the warmest affection for others of their kind. Rev. Mr. Keyser had a blue jay reared from the nest. While still young he was put into a cage with two young catbirds, for whom he conceived a touching affection. He would sidle up to one and caress it in a most loving way, moving his beak over its feathers, now on the head, now on the back and wings. He insisted on sleep-

ing between the two little birds, and looked very droll with a small bedfellow on each side of him.

The same bird showed a love of society. On one occasion Mr. Keyser's several cages of birds were moved from one porch to another on the other side of the house. The jay's cage, being too big for the new quarters, was left behind, when at once the bird began to express his dissatisfaction and loneliness. All day he rushed about his cage, calling in the most pitiful way. The next morning he was no more reconciled, and showed so plainly by every look and motion his unhappiness that a place was made for him near the others. The moment he saw them he gave a cry of delight, his calls ceased, he chirped and twittered, and was his happy self again.⁶⁸

Mrs. Robins, Secretary of the Pennsylvania Audubon Society, who kept birds in an aviary, — birds, let me hasten to say, which she found injured or disabled in bird stores, — had once two bobolinks, birds who resent captivity perhaps more than any other of our native birds. They were so unhappy in the company of their neighbors — thrushes, robins, and others

—that their kind-hearted mistress placed them in a room by themselves, with cage doors open and every arrangement she could think of for their comfort and happiness, intending as soon as moulting was over and their wing-feathers properly developed, to set them free. This arrangement, to her great disappointment, did not content the bobolinks, and so far from enjoying the freedom of the room, they remained moping in the cage all day. Upon this they were returned to the aviary, when, to her surprise, they at once became perfectly tame and sang all day, apparently contented and happy.⁶⁹

It is related of James Russell Lowell that he once found a family of birds long past the age for flying which had become entangled in the nest material and held prisoners, but had been fed and cared for so well that when after some work he succeeded in releasing them, they were in good condition and able to fly.

Instances of personal love or friendship between birds, not only love of mates for each other and their young, but between birds of different species, are often noted by keepers

of pets. I had myself a bird who on three occasions manifested the warmest attachment for a bird of another species, following the adored one around, protecting it from others, singing to it, and devoting so much attention as almost seriously to interfere with his care of himself, and after its death or liberation moping and grieving for some time. The bird was an English goldfinch, and his successive friendships were for an English blackbird, a scarlet tanager, and a European golden oriole.

Some of the bird family show a polite regard for their fellows that might profitably be copied by members of the human family. The Canada jay — a bird well known to lumbermen, hunters, and campers in the Adirondacks and other northern woods — has a reputation for familiarity; or, as a writer from a Maine lumber camp puts it, “For cool impudence he surpasses every other.” He will enter a tent and appropriate whatever strikes his fancy, eating anything from a candle to a cake of soap, not excepting the lumberman’s dear delight — tobacco. The Indians declare that he will eat moccasins, fur caps, and matches. In spite of this reputation, the bird shows

consideration for his fellows not too common in the human family. Dr. Merriam says that when camping in their vicinity he often offered the birds the slight refreshment of a camper's pancake pinned to the ground by a stick. The jays always accepted the invitation to breakfast, pulling off pieces of the cake and eating them. But never did they quarrel over it. Each one waited for his predecessor to be served before he approached the cake himself. Considering the fondness of this bird for the food of men, this shows a remarkable self-control, as well as kindness to others.

An egg collector tells this story on himself. He once approached the nest of a wood thrush on his usual errand. Both of the pair defended their home, and their cries brought to their assistance a crowd of other birds, — warblers, redstarts, chickadees, and above all a pair of belligerent blue jays, — reinforcements so strong that the enemy quailed before their combined attacks, and was glad to get away with both eyes in his head.

Mr. Selous, who has made interesting studies of the sea and shore-birds of the British Islands, once found a young tern just

beginning to fly. As he walked towards it the youngster would fly a little way and then come to the ground at some distance. Every time it alighted a crowd of adult terns hovered excitedly over it, and first one and then another would swoop down so as almost or quite to touch it, until it made another effort and flew up again, so that he could never approach it more nearly. "It certainly seemed to me," he concludes, "as though the grown community were trying to get this young one to fly so as to be out of danger, and this they always succeeded in doing. . . . What interest and sympathy were shown!"⁷⁰

What can it be but liking for their kind that induces so many birds to live in great cities together, in most cases peaceably, at least far more peaceably than do human dwellers in cities, one of their greatest infringements of the rules of kindness and good manners being — so far as authentically reported — a certainly laudable desire to rear a large family, leading to the sly stealing of eggs from a neighbor's nest while its guardian is away from home.

These interesting builders of cities, which

in size rival our own, are mostly sea-birds who get their living from the ocean, some of whom, indeed, are said to come on land only for the purpose of nesting.

Mr. Walter K. Fisher gives a most entertaining account of a large city of the albatrosses sometimes called "gonies," on the island of Laysan. A very agreeable thing about these birds was their fearlessness of man,—whom in their limited experience of his ways they did not recognize as their greatest enemy. Mr. Fisher often sat down among them, when they looked at him with composure, sometimes came up to him, and in fact appeared perfectly friendly. They were much addicted to bowing to each other, with what object Mr. Fisher could not discover, and when he bowed to them they returned the salutation. Their inspection over, they returned to their domestic duties, feeding the young and attending to their own toilet without the least sign of concern.⁷¹

Other vast colonies of sea-birds have been described by many authors, notable among them being those of the Bird Bergs of Lapland described by Alfred Edmund Brehm.

V

HIS EDUCATION

Some folks say they never see things like other people. The fault is their own: they do not know how to look for them. — "A SON OF THE MARSHES," *In the Green Leaf and the Sere*.

The more the habits of any wild animal are known the greater is our admiration called forth, for we see traits and character developed and intellectuality exhibited that are ever hidden from the superficial observer. — JAMES GREENWOOD, *Wild Sports of the World*.

All his life long a bird is learning. An old heron is far more knowing than a young one. The young curlew has to learn much from his seniors and by experience before he attains to the proper curlew standard of wariness. — F. W. HEADLEY, M. A., F. Z. S., *Structure and Life of Birds*.

V

HIS EDUCATION

ANOTHER thing that brings the bird into near relationship with us is the fact that he has to be educated. Sticklers for the old notion of instinct as distinguished from reason may not believe this, and it is confidently asserted to this day that as soon as a young bird can fly he is pushed out of the nest, or driven away by his parents to take care of himself.

Nothing can be farther from the truth, as has been proved a thousand times by latter-day observers, who study from life and not from dead books, who watch for themselves instead of accepting the statements of ignorance or prejudice. According to all the testimony I have been able to gather from real observers, as well as from my own observations during more than a score of years of close study of living birds, bird parents are as tender of the welfare of their offspring as human parents, and no more than the human do they turn the young out to care for them-

selves *until they have been trained in the way of life*. It must always be remembered that the period of a bird's helplessness — his school days, so to speak — is much shorter than ours. He is trained for life in a few days or weeks.

In my closest watching I never saw an instance of what even looked like hurrying the young, not to say driving them, away. On the contrary, it seems to me that the most careless observer must see that the time of leaving the nest is one of great anxiety to the parents, and an accident, like a fall to the ground, is treated like a serious calamity. I have seen the most loving care exercised at this time, such, for example, as a parent's flying directly *under* the venturesome nestling in its first flight, calling sweetly all the time to encourage him, and near enough to receive him on his own back if his strength gave out. Examples such as this, and many other facts observed, long ago convinced me that bird parents love their young as tenderly as we do ours.

Although to careless observers the young soon appear to graduate from parental care,

their relations are not severed by any means. I have often seen the statement that the Baltimore oriole leaves us as soon as the young are out of the nest, but more times than I can tell I have seen him, long after he had become silent and apparently had departed, stealing about on the ground under bushes and in lonely places, with two or three youngsters following him, seeking food for them and teaching them to find it for themselves, the whole party as silent as if they were in hiding.

It is known that in many cases the family remain in a little flock all winter. It may be that all birds have this strong family feeling, but in most cases their habit of migration makes it impossible to determine.

The story of birds deserting or driving away their offspring is as old as Aristotle; but so are other tales long ago disproved, such as this: "The eagle scorns to share the spoils of another bird, and rejects every species of prey which he has not acquired by his own industry and prowess."⁷² Eagles, it is true, may have degenerated since the day that was written, and I need not mention the

well-known food habits of our own national bird.

As for the truth of the story, there is far better evidence for the old tale that swallows hibernate buried in mud at the bottom of ponds; even Dr. Coues says the evidence in this case is too strong to be dismissed with scorn.

To be sure, Edmond Selous repeats the statement of the birds' parental harshness on the word of a rustic in the British Islands; but from much better authority than any illiterate rustic — from a scientific publication, a dignified encyclopædia of nature wisdom — we have the extraordinary tale that when the plumage of an eagle becomes worn and past its usefulness the bird flies up near enough to the sun to become excessively heated, and then plunges instantly into the sea, when the old feathers fall off, and new plumage at once appears, and with it a renewal of youth; and the significant information is added that in this statement "the learned and even the critics themselves are agreed."⁷³

I cannot refrain from giving another gem from this treasure-house of knowledge. It is

a description of the unique method of sleeping practiced by the albatross. When the bird wishes to sleep it "rises into the clouds as high as it can, when, putting its head under one wing and beating the air with the other, it seems to enjoy its ease. After some time, however, the weight of its body, only thus half supported, brings it down, and it is then seen descending with a pretty accelerated motion towards the surface of the deep; on this it again exerts itself to rise, and thus alternately ascends and descends at its ease."⁷⁴

The training of young birds, it must be understood, is never paraded before a man with a gun, or even a casual looker-on. It is seen only by a fortunate accident or by persistent, untiring watching. Professor Lloyd Morgan, to whose studies I have referred, made some interesting experiments in the instinct of birds, by rearing chickens and wild fowl from an incubator, so that they never could have learned anything from their parents. He found that they needed to be taught almost everything necessary to the proper conduct of their lives, — not only to distinguish what was good to eat, but even the very

acts of eating and drinking. They showed no fear of the human race, and plainly did not understand the language of their own mother when he placed them near her. The mother-cluck of the hen had no meaning for the incubator chick, who nevertheless came promptly when *he* called. These experiments proved conclusively that young birds are taught — or learn by imitation, which is the same thing — to eat and drink, to understand their native tongue, to recognize and procure their food, and to fear mankind.⁷⁵ “Flight has an instinctive basis,” says Mr. Morgan, “but all the niceties, the skill, come from practice and the instruction and imitation of parents.”⁷⁶

“The young falcons and hawks,” says “A Son of the Marshes,” “are well trained by their parents: from the time they are strong enough to break up the food brought to them it is one long course of instruction. The old birds teach them to strike at their game. One or the other will shoot up with a portion of food followed by the young ones. When the morsel is dropped they dash after it, and the quickest gets it.”⁷⁷

I have often seen the young sandpipers of

a summer being drilled and trained in the art of flying together, which, as these birds execute it, is one of the most fascinating scenes of the shore. The infant drill was an irregular zigzag performance very different from the perfect movement of the grown-up flock, passing back and forth as it does over the water almost as one bird, or as if moved by one brain.

Parents in the bird world, as in the human, have not only work of the most exacting kind, but anxieties and cares as well. From the moment the nest is occupied by nestlings till the young are fully grown and educated, many perils menace them, which they must be trained to understand and avoid.

Worst of all, perhaps, are the anxieties of the time when the young birds leave the nest. Young America in feathers is almost as bump-tious and self-assertive, and needs almost as much guidance, as Young America in flannels and lawns. Though the parents may be as wise as Solomon, the youngster will be foolish and headstrong: he *will* call and shout when enemies are near; he *will* leave the nest before his wings are ready for service, and so

place himself at the mercy of cats and other prowlers. As soon as he has even partial use of his wings he will wander into a thousand dangers and draw his devoted parents after him, for they cannot desert him, and he will not heed their coaxing. In such cases the distracted parents have been known to attack and beat off their great enemy the cat, and even to fly at man himself, sometimes with success.

But let me give the testimony of others: Professor Morgan says that birds reared from incubators, and so deprived of parental instruction, have no fear of dog or cat, or even of a man if quiet in movement.⁷⁸

Hudson also, who studied scores of young rheas, or South American ostriches, who were taken before they were taught what to fear, asserts that not one showed fear of him. A brood that he kept himself followed him about, as tame as a pet dog or cat.⁷⁹

Again, the same observer watched the common sparrows (in England) and fed them from a window. The young when first able to fly were brought by their parents, and after two or three visits they came alone. "At such times," he declares, "they would venture

quite close to me, showing little suspicion, but the adults were extremely suspicious and showed it so plainly that soon the young learned the lesson, their suspicions increased day by day, and about a week later they acted exactly like the adults. It is plain that fear of man is taught them.”⁸⁰

Nor can we be surprised at this fear. Says Professor Shaler: “We have through our hunting instituted a very thorough-going and continuous system of selection, which has tended to affirm in these creatures an intense fear of our kind. Only the most timorous have escaped us, and year after year we proceed to remove with the gun the individuals which by chance are born with any considerable share of the primitive tolerance of man’s presence.”⁸¹

Again, Hudson says: “Another proof that the nestling has absolutely no instinctive knowledge of particular enemies, but is taught to fear them by the parents, is to be found in the striking contrast between the habits of parasitical and genuine young in the nest, and after they have left it, while still unable to find their own food. The warn-

ing cries of the foster parents have no effect on the young cowbird [of South America, of course] at any time. Until able to fly they will take food from the hand of man, even while the old birds are screaming and their own young are crouching down in the greatest fear. As soon as the young cowbirds associate with their own kind they become suspicious and wild like other birds.”⁸²

It is not uncommon to see young birds taught to bathe, both in aviaries and in freedom. This little story was told to me by an eye-witness who always kept bathing conveniences ready for the birds on his place:—

On this morning he saw a mother robin trying to get a young one to go into the water. The youngster refused, seeming to be afraid. At last, after much coaxing, the mother flew away, and returned bearing in her beak a tempting earthworm. At once the infant began to beg and clamor for the morsel, but the mother alighted in the middle of the water dish, and, holding the worm in plain sight, stayed there till the unwilling youngster plunged in after it. Once in he appeared to enjoy the splashing he received.

All close observers of bird-life must have heard the young at their singing-lessons. It is a rare pleasure, says Mr. Fish, to sit on the slope of a certain ravine and listen to the birds teaching the young, sometimes the robins, sometimes others, but oftenest the song-sparrow, the older bird singing a little, then the young taking it up in that quavering, uncertain manner heard in young canaries just beginning to sing.⁸³

The fact that young birds learn the song of those they are with has been proved many times since the well-known experiments of the Honorable Daines Barrington, published in 1773, made it known. On placing several nestling linnets under the instruction of an equal number of the best singers in England he found that each one learned the song of its foster parent.⁸⁴

There is plenty of evidence that young birds reared away from their parents, and therefore receiving no instruction in song, never learn the perfect song. This has been abundantly proved by captive birds, as all who have kept pets and observed them will testify. Mr. Scott, who has had exceptional

opportunities for such study of numbers of captives, is emphatic in his utterance on this point. He says that of the seventy or eighty that he has studied not one ever sang the normal song of its species.⁸⁵

Again, Mr. Scott had in his bird-rooms a deformed blue jay, who was reared from the nest and never associated with his kind. In the room was also a cardinal grosbeak, one of the finest singers of his family. The young blue jay learned the song of the cardinal so perfectly that Mr. Scott could not tell it from the cardinal's own. "Even when hearing the two performers almost together, I could distinguish only a slight difference, which was not in the cardinal's favor."⁸⁶

A gentleman in Brooklyn, N. Y., whose roomful of birds I have often visited, picked up a young chewink, or towhee bunting, who had somehow got separated from his family, and seemed in distress. He was placed in a cage near a European ortolan, and learned his song perfectly. To see if the youngster would recognize his native notes the gentleman procured an adult chewink in full song and placed him in a cage near the young one,

who, however, persisted in singing what he had learned from the ortolan, paying no attention whatever to his relative.⁸⁷

I have known and corresponded with several persons who have reared birds from the nest, and all testify that the young bird does not sing his native song. A catbird reared in this way, whom I took quite a journey to see, as related elsewhere, having no other bird's notes to copy, sang a medley of his own composition, introducing into it as part of the song some of the loving words addressed to him by his mistress, which he pronounced perfectly, and some of the cries of the street boys who played under the windows, but, excepting the quality of his voice, there was no resemblance to the catbird song. A tame blue jay learned to sing deliciously, almost as well as the mockingbird whom he imitated, and was besides almost human in intelligence and affection.⁸⁸

Even an adult bird can and often does learn a song not his own when circumstances give him an opportunity to study another's score, as I have told elsewhere. I have heard and seen a common English sparrow out of

the streets sing the canary song perfectly, and better than the canary himself, because of his richer voice; and, what was not so strange, considering the reputation of the family, I have heard a mockingbird do the same thing, executing the whole song exactly as the canary does, and not in the short-clause, disjointed way in which this bird usually sings. The sparrow had been injured and picked up helpless in the street, carefully nursed by a sympathetic woman, and placed in a cage near a singing canary, and while recovering from his accident he occupied his leisure in cultivating his voice. The mockingbird lived in a cage beside a roomful of canaries, separated from them only by a wire gauze partition. With the fun-loving nature characteristic of this bird, nothing could delight him more than to perfect himself in the song of his small neighbors, and then, while they were in the full blast of singing, — fifty of them together, — to break in upon them with their own notes in his much louder and finer voice. This always silenced them instantly, apparently in amazement, but the impulse to join in the song soon became irresistible, and

in another moment the whole house was ringing with the music.

Year by year, as men have grown broader and studied deeper into the lives about them, the lines separating the so-called "lower orders" from us have become fainter and fainter, till now the possession of many of our faculties is conceded to them, and most of our virtues, and some, alas, of our vices, may be found in the kingdom we consider beneath us.

Read the words of a thoughtful modern writer: "The world is learning to see relatives—in collateral and far-off degrees, no doubt—in animals. Their poor little lives are just like ours, but cast in narrower lines; we find the germ of every faculty that we can boast of in their hearts and brains."

And, again, our own Agassiz: "The passions of animals cover the same field as those of men. I fail to perceive between them a difference of species, however great may be their differences of degree, and the variety of their modes of expression."

VI
HIS AFFECTIONS

I believe as firmly in the morality of animals as in the morality of bishops and deans. — SIR EDWIN ARNOLD, in *The Youth's Companion*.

Man exhibits hardly a trait which he will not find reflected in the life of a bird. — FRANK M. CHAPMAN, *Bird-Life*.

Man, with all his striving towards a better social state, has, as a whole, not yet attained to the enduring affection for the mate which is evinced by the greater part of the birds. — NATHANIEL SOUTHGATE SHALER, *Domesticated Animals*.

VI

HIS AFFECTIONS

It is a time-worn belief that birds have no family affections; that their loving care of their mates and young continues only through the time of their helplessness, and that as soon as the young are trained and capable of taking care of themselves, all interest in each other ceases. It is even said, as noted in a preceding chapter, that the parents drive away their offspring.

Volumes of proof of the family affection of birds could be produced. I will cite but few. Mr. Pollard says that the long-tailed titmouse (an English bird) continues to associate with the young long after they leave the nest. They go about in family groups till the next spring. He once saw a pair and their ten young ones sunning themselves together on some rhododendron bushes.⁸⁹

Dr. Roberts, in an interesting account of Franklin's gull, read before the American Ornithologists' Union in 1899, spoke of the

affection of mothers for their young, and not alone for their own. The infant gull, it seems, is a wanderer, escaping from the nest early in life and wandering about among the neighboring nests of the colony. Every mother tries to coax these stragglers to cuddle down by her and be taken care of, and some of them manage to collect about themselves a goodly number of the roving infants. This does not meet the approval of the real mother, who, on her return from her food-hunt, proceeds to look up her little folk and get them home by the summary process of taking them by the neck—the only way she can take them—and returning them to their proper nest.

“Quail,” says Elliot, “are affectionate birds, and each little family keeps always together, no member ever leaving the main body unless under compulsion, and then it is very restless and unhappy until it has regained its companions.” When scattered they come together again, each one calling a low, plaintive “quoi-i-hee,” and, responding, going towards each other till all are united.⁹⁰

Mr. Selous, in his close watching of shags, or cormorants, speaks of their pretty family

life. The young are good-tempered and playful, a good deal like puppies, "and the heart goes out to them and their loving, careful, assiduous parents. As pretty domestic scenes are enacted daily and hourly on these stern old rocks, within the very heave and dash of the waves, as ever in Arcadia, or in any neat little elegant bower where the goddess of such things presides." ⁹¹

The same writer, too, in speaking of nesting guillemots, says: "Much affection is shown between the paired birds. One that is sitting will often be very much cosseted by the partner who stands close behind or beside her. With the tip of his long, pointed beak he, as it were, nibbles the feathers of her head, neck, and throat, while she with eyes half closed . . . bends her head backward or sideways towards him, occasionally nibbling at him at the same time. When the young one appears, the father cossets it in the same way, only very gently. Both parents stand side by side over the chick as if they could not make enough of it." ⁹²

Sportsmen often see striking evidences of the love of mates. Mr. Nelson relates that,

as after killing a female snowflake they went slowly away, her mate followed, "flew about us, continually uttering a loud, plaintive call-note all the time we stayed in the neighborhood. He showed the greatest distress, and appeared to be perfectly aware that we had his mate in our possession, for he deserted the nest and followed us over one hundred yards, keeping close to us, regardless of any danger to himself." ⁹³

The loon, or great northern diver, is reported to have displayed her mother love and anxiety in this manner to a sportsman fishing in Sebago Lake in Maine: He surprised the mother with one young one near his canoe. She was employing every artifice to call the little one away, but the infant swam so near the boat that the fisherman took him aboard in his landing-net, and, holding him on his knee, gently stroked his downy coat, to the evident satisfaction of the youngster. Meanwhile the mother was in an agony of distress. At first, forgetting her native wildness and timidity in her mother love, she boldly approached the canoe, and, rising in the water till she appeared to stand upon it, furiously

flapped her wings, uttering menacing cries. Finding this of no avail, she pretended that she was wounded, rolling over in the water and finally lying still as if dead, evidently to attract attention to herself and away from the young one. The fisherman, touched by these displays of motherly affection, put the young loon into the water, upon which the mother instantly came to life and again tried to entice her little one to go with her. But he liked his new acquaintance so well that he remained near the boat until the man paddled away to a considerable distance, where he waited to see the outcome of the adventure. As he withdrew the mother with cries of joy swam to her little one, dived beneath him, and, taking him on her back, quickly bore him to a safe distance, when she stopped; and the human listener says he never imagined the loon could produce such soft, sweet, melodious notes as she then uttered.⁹⁴

The mother-love of a bird sometimes, indeed, gives her a wonderful courage. Sir Edwin Arnold tells of the bravery of a hen when a ferret, escaped from confinement, suddenly appeared before her. She was in charge

of a brood of chicks, and the animal was evidently after something to eat. "Imagine," says the narrator, "some rural matron abruptly confronted with a dragon or foaming tiger. . . . Terror would paralyze her, she could and would probably do nothing but scream; but this fussy, foolish little Dame Partlet . . . fluffed out her gallant plumage and went for the monster so vigorously, pecking and kicking and bewildering him, that the little ones were safely perched in a small fir tree before the dangerous beast had filled his wicked mouth with her feathers, and angrily given up the chase. Our glorious Order of the V. C. has been awarded for deeds which were merest child's play compared to the valor of that heroic hen." ⁹⁵

Birds prove their affection for the young by giving their own lives for them. A gentleman who was in the Lake Superior region looking up mining interests told me this story (which I have related elsewhere): The party set fire to a group of trees on a point of land running out into the lake. In one of these trees was the nest of a pair of fish hawks containing young. As the flames neared their

tree, they flew about in great excitement, crying and showing great distress. When the flames mounted higher and at last enveloped the nest, the pair with one accord dived down into the nest and perished with their young.

Many similar cases have been reported. During a fire in the Maine woods a few years ago some of the men who went out from the camp where I was staying to fight the fire told me of seeing birds throw themselves into the flames where a bush was burning. No doubt they had nests there.

A similar devotion was exhibited by that universally misunderstood bird already vindicated by Sir Edwin Arnold, the domestic hen. After a very disastrous fire in Minnesota, known in the annals of the state as the Hinckley Fire, a man walking over the ruins discovered a dead hen sitting closely on the ground. He poked her with his foot, when she fell over and disclosed a lively little brood of ducks, which ran out, apparently glad to be released. She had protected them with her own life, for she could easily have escaped herself.

Instances multiply upon one. Thomas Ed-

ward one day came upon a wild duck lying on her side in the snow. He found that she was dead, with neck stretched out, mouth open and full of snow, and wings somewhat spread. On lifting the body he discovered a nest with thirteen eggs, every one of which on later investigation proved to contain a young bird. This was undoubted proof that she had sat upon them for two or three weeks. Upon close examination of the body no marks of violence were found, so that he was convinced that she had died in a desperate struggle to protect her eggs from the fatal snowstorm. "A deep and striking example of maternal affection," he calls it. "Her own life she could easily have saved had she been willing to abandon her brood." In respect for her mother-devotion Mr. Edward wrapped her body in paper and buried it with her eggs.⁹⁶

Major Bendire tells a story of devotion that had a less tragic ending. A gentleman hearing bird voices in a fireplace long after the chimney swifts had taken their departure had the curiosity to take out the fireboard to investigate. He found that a young bird had become entangled in a long hair and fallen

to the bottom of the chimney. Attendant upon the prisoner was a devoted parent, presumably his mother, who had kept him so well fed that he was strong and vigorous. She calmly looked on while he cut the hair and set the youngster at liberty, and then began instructing him in the art of flying. It was more than an hour before he succeeded in following her up that long dark lane to the open air; but when he did, the pair at once started on their long and lonesome journey to the winter home of their tribe.⁹⁷

The affection of birds for the young sometimes assumes a ludicrous form, such as in the case of the gull, already mentioned, where the mothers seem to desire to appropriate all the little ones of the colony. A mother eider duck is said to be so greedy of a large family that she will steal the eggs from a neighboring nest while its owner is absent for food. But this is not a serious matter, for upon her own departure on the same errand the despoiled becomes the despoiler, and so the balance is maintained.

Whether birds dissolve partnership after the young are reared and fitted for life or

remain mated the year round, or even for life, is a mooted question, and great difference of opinion exists. Many close observers have decided in favor of the life-marriage of birds, at least of some birds. One of the latest is Mr. Beebe, of the New York Zoölogical Park, who says: "The number of kinds of birds which remained closely associated in pairs during the winter was remarkable, and perhaps indicated that many more species of Mexican birds mate for life than is the case with the birds of our Northland."⁹⁸

"There is no lack of direct evidence in proof of union for life," says a lifelong nature student. "Keen-eyed naturalists, who have observed certain birds for many successive years, and have at length come to know them so well that they could not confuse them with others of the same species, have given us their guarantee for the birds' devotion; and all of us who have given special attention to the birds which have come under our notice must be led to the same conclusion."⁹⁹

Certain South American birds, the tree-creepers, or wood-hewers, are said to mate for life, and their mutual attachment is very

marked. So fond are they of each other that during the long days when incubation requires the constant presence of one of the pair, the other sits patiently at the entrance to the nest; and later, when feeding is the business of the day, the pair go together in search of provisions and, if unhappily separated, they make the air ring with their calls to each other.¹⁰⁰

Other testimony from the same observer is to the effect that the burrowing owls of the same continent are most loving and united pairs, always together, standing stiffly erect at the mouth of their home, almost touching each other.¹⁰¹

And that curious fellow-creature, the crested screamer, — who, according to Hudson, does not deserve the name, — is always near his mate, even when large flocks are seen together.¹⁰²

Some of the birds carry family devotion even further. A South American bird lives with its mate the year round, much of the time with their grown-up young in the old home. In this case the nest must be a very substantial affair, of wood, in which so much

building material is used that the bird is known among the natives by the name of the firewood-gatherer.¹⁰³

There are cases on record in which a pair of nesting birds have been caught and marked, — some with a bit of fine wire around the leg, others with a small strip of parchment tied to the same member, — and in which the birds have both returned from their winter absence to the same place.¹⁰⁴

Mr. Fish tells of a pair of golden-winged woodpeckers who came to the same nest for four years. He easily recognized both birds. In the fourth year a boy shot one, and the survivor took care of the brood alone, successfully rearing it; but the nest was never again occupied.¹⁰⁵

Professor Shaler says that pigeons mate for life even in domestication.¹⁰⁶

Brehm tells of seeing in Nubia a pair of storks long after all their kind had migrated. To find the cause of this strange conduct he had them both shot, when he found that the female had a broken wing and could not fly, and her mate would not desert her.¹⁰⁷

Major Bendire believes that most of our

hawks and owls and eagles remain paired throughout life, and he gives evidence in the case of several species.¹⁰⁸ Other observers have added to the list the bluebird, two or three sparrows, among them the delightful song sparrow, a wren or two, in spite of their irritable disposition, the dignified cardinal grosbeak, that sweet singer of the fields the meadow-lark, that comical woodpecker the flicker, the brown thrush or thrasher, that victim of prejudice the catbird, and, what we should confidently expect, some of our calm and reserved thrushes.

A strong proof of family feeling is furnished in cases where two or more broods are reared in a season, birds of the first brood helping to feed and train their younger brothers and sisters. Several cases are on record. Mrs. Treat's story of bluebirds annoyed by English sparrows has been already mentioned. The English song thrush has more than one brood, and an English writer says, "The young of the first brood of the song thrush, when they can fly well and find all their own food, help to bring up the young of the second brood."¹⁰⁹

The fondness of birds in captivity for people who are kind to them and make companions of them is really pathetic, — pathetic because human beings rarely recognize the fact that the bird loves them, and are exceedingly prone to ignore it and often to wound the little heart sorely. “A parrot,” says one who has kept many of them, “is unfortunate indeed to belong to one who is not a bird-lover, where he is regarded as merely an ornament to amuse visitors, and left to servants. He becomes joyless and irritable. Almost every parrot, particularly if highly gifted and lively, wishes to love and be loved, which no amateur should forget. Whoever cannot fulfill this chief condition of a parrot’s well-being does very wrong to buy one.”

“A highly gifted parrot, more than any other creature,” he goes on, “is liable to be made ill or even to die from the effects of mental emotion, and this not only from terror but from longing after a beloved master who petted it, or after a feathered companion.”¹¹⁰

A cockatoo, says the same writer, who cannot love any one about it appears cross and distrustful, but this only shows its high intel-

lectual talent; for, while a gray parrot is contented to have an indifferent understanding with its master, a cockatoo must either love its master with ardent love or be at war with him.¹¹¹

A correspondent wrote me of her pet blue jay that "he was almost human in his intelligence and affection. I tried to let him loose, but he absolutely refused his freedom, and would sit upon a tree and scream for me till I came out, when he would fly down to my shoulder and rub his head against my cheek like a kitten."¹¹²

Almost any captive bird's affection may be won by kindness, and not only affection but devoted love, — love that is sensitive, and even jealous, sometimes to the death of the bird who has set his whole heart on his friend. Touching instances are on record. The bullfinch is said to attach himself so warmly to his master or mistress as to show great distress when they take up another pet, or even a human friend. If a rival bird is persistently noticed, the bullfinch has been seen to pine away and die. Our own blue jay becomes almost as passionately attached, as noted in the anecdote just related.

“It is quite an easy matter to break the heart of a bird,” says “A Son of the Marshes.” “I would rather kill with my own hand any pet of mine than give it up to any one, unless he was a greater lover of wild creatures than myself: and such a one, I fancy, would be hard to find.”¹¹³

“There is an impulse, a law,” says Maurice Thompson, “other than the instinctive movement towards food and protection, which causes the song-bird to get close to man. . . . Indeed, all the lower animals are capable of loving man, and many of them have often and voluntarily sought to show such affection.”¹¹⁴

Mr. Fish tells of a crow fond of his master, who in a heavy snowstorm was beaten to the ground several miles from home. A boy caught him and clipped his wings so that he could not fly. All winter long snow covered the ground, but in March it went off with a heavy rain, and the poor crow started on foot for home. He walked all those miles and found his way, and came up to his master a poor, tired, bedraggled bird. His master recognized him and took him up, and the crow went nearly wild with joy. Never again would

he go off the place, though after the next moult he could fly as well as ever.¹¹⁵

The affection for his mistress of the robin "Chupes," whose story I have told, increased with years. Her absence for a few hours was enough to still his song and cause him to mope sadly. When she left him for a day or more he would neither bathe nor sing, nor even eat, but would retire to a dark closet and remain till her return, when he would welcome her madly. He would never accept his freedom, but delighted to accompany her everywhere out of doors, ready the instant she moved to fly to her. When he became ill he was not contented a moment away from her, and at last he died in her hands.¹¹⁶

Mrs. Slosson tells a charming story of the attachment of a parula warbler who had been stunned by flying against a house, and taken in and fed with flies. He at once attached himself to her in the most loving and fearless way, refusing to leave her even when out of doors in perfect freedom. When at last she was forced to leave him, she had to deceive him and steal away when he was for a moment out of sight.¹¹⁷

That birds suffer from jealousy needs no proof to those who have kept caged birds. The introduction of a stranger often sours the temper of the former favorite, destroys his happiness, sometimes, if there is opportunity, leads to murder, and not infrequently causes his death.

To give but one instance: Two singing canaries, belonging to two ladies in the same house, hung beside the window in their cages, one a small affair of gilt large enough for but one bird, the other much larger and plainer. The owner of the large cage bought a mate for her bird and placed her in her new home. The newcomer was expected to accept her fate and be thankful, but she proved to have opinions of her own. She noted the gay neighbor across the way and plainly decided to have a choice in the matter. She began by uttering a sweet call, so loud that even the human listeners understood it was not addressed to the bird in the cage with her. Her cage-mate appreciated it at once, as was evident. Her call and the answer from the opposite neighbor infuriated him, and he scolded roundly. All the more she turned her atten-

tion to the gay outsider, who answered with joyous surprise and much singing. For several days there was a curious and very human exhibition of jealousy on the part of the neglected owner of the cage. When she took much notice of the stranger over the way, her cage-mate resented it with scolding, blustering, and at night refusing her a place on the favorite perch. This state of things lasted for days, and no human hand was raised to settle the trouble, for no one suspected the depth of feeling in those little hearts, nor dreamed of the tragedy which would follow. One morning both birds in the larger cage were found in a terrible, almost dying, condition, having apparently been fighting for hours, and feathers were scattered all over the floor by the violence of their contest. One did die, and the other never fully recovered, though she lived for some months.

In closing this subject I want to put in a word for the caged birds which I am sorry to say are so common in our land. Think what suffering must be endured by creatures so delicate, in our ordinary careless way of treating them, — teased by children, fed and at-

tended by servants (when they happen to think of it); sometimes not spoken to for days at a time, regarded in fact almost like a piece of furniture; cramped into cages so small they can hardly move about; hung in the burning sun with no shade for their poor little brains, or placed in an open window in a draught by a mistress afraid to let the breezes of heaven touch herself; fed on dry, often musty, seed, with no variety, which to birds no less than to men is the spice of life and necessary to their health as well as their happiness. The wrongs and sufferings endured by caged birds, nearly always from want of thought, are enough to drive a bird-lover mad.

VII

HIS COURTSHIP

Little, we suspect, do the majority of men and women dream that what they please in their ignorance to call “inferior animals” possess hearts and heads, feelings and thoughts, almost identical with their own.

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Birds, even small birds, fall in love — desperately in love — madly in love — and they sometimes even love unto death — aye, little birds far more often die of broken hearts than human beings do. — DR. GEORGE HARLEY, F. R. S., *Selborne Society Letters*.

VII

HIS COURTSHIP

AT no time is the resemblance between bird and human ways more apparent, and one may say more amusing, than in that interesting period of youthful life, that season of alternate ecstasy and despair, — the theme of most novels, — wooing time. There is scarcely an idiosyncrasy of the human lover, from the savage to the choicest product of the twentieth century, but has its counterpart in some feathered lover.

As in the world of mankind, the responsibility of wooing devolves upon the swain, who must please and win the beloved, and to this end he is equipped with varied attractions, — beauty of person, musical ability, or a talent for entertaining and making himself agreeable.

The power of choice, says Audubon, always remains with the demure little maiden, who looks on and observes the demonstrations of her admirer and quietly makes her selec-

tion. Like her sister in silks, she is prone to be capricious, and to be governed in her decision by some occult reason, sometimes apparently by no reason at all. Sometimes, too, on the other hand, with still less propriety than people in their sober senses can discover, one fair maid in feathers will have many admirers, a mob around her all the time, while another of the same "set," just as lovely, has absolutely not one.

Nor is it by any means true, as we have been accustomed to think, that all birds are mated. Close observers have long been convinced that there are always single birds, both bachelors and maids, doubtless for the same reason that obtains in human society, — they have not found mates to their taste.

Courtship in the bird world, as in the human, is a critical business, often tedious and prolonged, with many a disappointment to be borne, for, with them as with us, it is a matter of individual liking.

Nor is trouble ended with courtship; cases of uncongenial unions, of summary separation, of erratic attachment, have been seen by careful students of feathered life. "Love

at first sight" is not at all uncommon even among those of different species; well-authenticated instances more than one are on record where a bird on meeting a stranger has at once deserted its mate and gone over to the newcomer. So also cases of deliberate alienation of the affections from the legitimate object, of mad jealousy ending in murder, have been seen and reported by trustworthy witnesses. Owing to the difficulty of observing wild birds, these instances are for the most part among those that are partly domesticated.

There are two popular ways of securing a mate in birdland: first, to win her, which may be done either by caresses or by "showing off" or "display" of plumage, or by performances, such as strutting, drumming, dancing, etc.; or, secondly, to take her by force, settling matters by driving away other pretenders, and by fighting, in which case she has no choice, but is the prey of the victor.

In the great variety of methods employed, one family of birds is unrivaled. One might paraphrase a familiar old saying and classify the feathered suitors in three divisions, —

woosers, bullies, and grouse. For that family wherever found, from the poles to the equator, from Central Africa to the United States, is always and forever one of marked characteristics, of idiosyncrasies most grotesque, with its strutting and bowing, drumming, dancing, and crowing, its outlandish poses, and its awkward capers.

Some of them rustle the tail-feathers like a lady's silk train; some fly high in the air and croak; some run around with tail spread and wings dragging, or with breast on the ground push themselves along like a snowplow. They ruffle their feathers, twist their necks, and utter growls, or croaks, or whines, or roars. They roll over and over, spring into the air, in fact, act like candidates for a mad-house.

Some blow up the loose skin of the side like an orange, as our own prairie chicken; others puff out a breast-bag like a pocket, after the fashion of our pectoral sandpiper; and still others fight like savages. In sober truth, there is hardly a way of securing a mate known in the world of birds that is not practiced by some member of this family.

One of the most famous of this sort of

wooer is the argus pheasant of Malay, named for the many eye-like decorations in his plumage. This bird has some of the wing-feathers immensely developed and ornamented with a long row of ocelli, or eye-spots, more than an inch in diameter and so perfectly shaded that they resemble a ball lying loose in a socket, says Darwin. The neighboring feathers are beautifully striped and spotted and otherwise decorated. When the bird spreads these highly ornamental wings and holds them forward so that their tips touch the ground, with the elegant tail spread for a background, he is truly a gorgeous spectacle, and when he bows gracefully to the "beloved object" it is hard to see how any female pheasant can be obdurate.

A familiar example of display is made by our familiar peacock; even the common turkey "struts his brief hour," though he has no gorgeousness to show. The well-known lyre-bird of Australia, possessing one of the most remarkable decorations in the bird world, not content to rely upon his beauty, prepares a small hillock in the brush, where he tramples constantly, uttering loud calls and imi-

tations of the notes of other birds and even of beasts.¹¹⁸

When a certain ptarmigan or snow-grouse of the Arctic regions goes a-wooing, he ruffles every feather of his body, spreads his tail, drags his wings, lays breast on the ground, and, pushing himself forward by his feet, twists his neck and salutes the fair one whom he desires to please with a growl, varying this fascinating display by astonishing antics, leaping into the air, rolling over and over, etc. Let no one laugh at this peculiar manner of showing devotion. He is a knightly soul, who will give his life for his love, deliberately placing himself between her and the hunter.¹¹⁹

Still different is the performance of a European bird, the blackcock or black grouse, a number of which species, it is said, have been domesticated in New England by Mr. Seward Webb on his place in Vermont. This bird, about the size of our partridge, is black and very wild. His reliance in courtship is upon his agility. Collecting a presumably admiring flock about him, he entertains them with antics, whirling and flinging himself about like a mad creature, varying the performance

by strutting and crowing at the top of his voice.

As active, but in a different way, is a bird from the north of Europe, also domesticated by Mr. Webb, it is said. He is one of the largest of the grouse, nearly the size of a turkey, — the capercaillie. This bird's performance is a dance, and he labors under the disadvantage of wooing while snow is on the ground, so that his dancing takes place on the branch of a tree. He accompanies himself with song, and his show hours are from dawn to sunrise and from sunset till dark. He fluffs out his plumage and begins with notes that sound like "pellep, pellep, pellep," — starting slowly and increasing in rapidity, probably as long as he can hold his breath, for it ends in a sort of gasp, followed by an indrawn breath, while his head is thrown up, eyes partly closed, and his whole appearance that of ecstasy.¹²⁰ During the singing he waltzes around, dances, assumes different attitudes, and puffs his feathers into the wildest forms. This exhibition seems to be attractive to the wood-grouse dames, for with the first notes they begin to collect, to look on and

answer in hoarse croaks. Then the dancer comes down and struts among them, bowing, drooping his wings, and swelling himself out to twice his natural size, all the time waltzing around and uttering a smothered gurgle.

The curious wooing of a species of plover, the stone curlew, is described by Mr. Selous. The pair are very grave and dignified, and "it is fashionable for the two to walk side by side close together with little gingerly steps, as though 'keeping company.' They seem very much *en rapport* with each other, also to have a great sense of their mutual importance, and, above all, of the great value of deportment. Suddenly one of them will bend stiffly forward till the beak nearly touches the ground, the tail and after part of the body elevated in the air. The other stands by and appears interested and edified by the performance, and when it is over, both walk on as before." ¹²¹

A ludicrous example of the *opéra bouffe* style of fascinating, comes, as might be anticipated, from that land of the unexpected, China. The bird, one of the pheasants, is ordinarily a personage of modest and dig-

nified appearance, and he hides his performance in the secluded retreats of the Himalaya Mountains. But the irrepressible reporter has sought him out and shown him up in his transports, and, moreover, he has been carefully studied in the London Zoölogical Gardens.

In courtship this dignified-looking bird blossoms out into the most grotesque figure imaginable. Fleshy horns rise on his head, hanging wattles swell and expand, wings open and droop, plumage stands out all over, and the possessor of all this glory sinks to the ground in an ecstasy. After a few moments of this dazzling display he pulls himself together, calmly rises to his feet, shakes himself into his normal shape, and goes about his business, as if nothing had happened, which is almost more funny than his display a moment before.¹²²

More interesting, if less startling, than the grouse manners, are the wooing ways of some of our familiar birds. What can be more charming and at the same time impressive than the method of the dignified great horned owl? There are no poses for display, no capers

to astonish the maid of his choice; he is, in fact, almost human in his approaches; he wins by caresses. He quietly draws near to his beloved, who stands on a branch turning her head away like a bashful girl. Fondly he strokes her with his bill, bowing solemnly, touching her beak with his — kissing, might one say? — then bowing again and sidling a little closer as she shyly draws away. His demonstrations are received with apparent indifference, but without resentment, and after a while they fly slowly away side by side, — a wedding journey perhaps.¹²³

Gentle and caressing also is the wooing of doves, with breast pressed to breast and mouth to mouth, “like the children of men,” says a sympathetic observer.

A bewitching way to win a mate is to charm her by music. This is the fashion of our little house-wren, who arrives first in the nesting region, selects a site for the home, and then draws a mate out of the vast unknown by his charm of voice. No one could do it better, for he is a delightful, tireless singer.

Posing seems to be a particularly effective

way of impressing feathered femininity, and it is significant and sometimes surprising to note the bird's exact appreciation of his individual charm, and his well-planned manner of displaying it. The tiny kinglet, for example, whose one spot of bright color is a narrow stripe or patch of ruby on top of the head, expands that till it looks like a ruby crown, and gives him a distinguished appearance.

Our flicker, or golden-winged woodpecker, is comical in almost every act of his life, and he makes himself irresistible by sitting up very straight, fluffing out his beautiful spotted breast with its velvety black crescent, and spreading wings and tail, showing their golden lining. To this exhibition he adds bowing right and left, and thus displaying his last special attraction, the rich black cheek patches or mustaches. Sometimes, perhaps when this display fails to accomplish its object, the flicker becomes more demonstrative, and takes to violence. "For hours," says Mr. Keyser, "a lover would pursue the object of his affection around and around, never giving her a moment's respite. When she alighted he would fling himself upon the spot where she

had been, for she had to hitch away to avoid being struck. His policy seemed to be to take her heart by storm ; no doubt she finally said yes merely to get rid of him, and then failed of her purpose. After courtship has passed the first stage, and she has grown less shy, the bowings and scrapings are truly ludicrous." ¹²⁴ The downy woodpecker is said to adopt the same tactics.

A flycatcher of the South, the vermilion, whose beauty is a breast of that brilliant color, displays that peculiar adornment by holding himself poised in the air over the head of the duller-colored personage he desires to charm. He hovers at a height of about twenty feet, with every feather of body and tail standing up, looking to irreverent eyes like an animated ball of feathers. ¹²⁵

A certain plover seen by Mr. Selous, having only a pair of gorgeous-colored legs to pride himself on, approaches his *Dulcinea* with legs quivering in rapid vibration and head drawn up, showing his snowy breast. ¹²⁶

Another family remarkable for display is that of the auks and puffins of the north. These birds, with no bright-colored or abnor-

mal plumage development to show, place their hopes on certain curious excrescences and colors on eyelids and beaks, which have been described and illustrated by many visitors to that country.

The horned puffin, ordinarily an unassuming personage in black and white, arrays himself for his bridal in grotesque style. His beak breaks out into gay red and yellow, with orange-colored rosettes at the corners, and it also becomes nearly twice its usual size. The whole side of the face takes on a white mask, and a slender horn stands up from the eyelid. That any horned puffiness can resist such a display in her honor is not to be imagined. The tufted puffin, sometimes called sea parrot, even surpasses his horned brother. The white mask, the scarlet rings around his eyes, the gorgeous red beak, even the bright yellow, coquettish plumes with which he is at this time adorned, as is the case with all these extraordinary decorations, soon drop off or vanish and the birds return to the sober black and white of everyday life. These puffins are, according to Mr. H. W. Elliott, two of the greatest scolds in feathers. The sound of do-

mestic contention comes up from their inaccessible burrows in a constant bellow. It is possible, however, that Mr. Elliott did not understand their language, and this might be ordinary Puffinese.¹²⁷

The common cormorant, another bird of the shore, is a droll fellow on all occasions, not least when he sits demurely perched on a rock, looking, as some one aptly describes him, like a long-necked black bottle. His love-making is unique. First he displays his one beauty, a brilliant orange mouth-lining. Stretching up his long neck and opening wide his beak that the splendid effect may duly impress, he sinks on his breast to the ground, as if unable to stand in the presence of his charmer, with wide-spread tail turned forward over his back and head turned backward to meet it, a most grotesque figure. Such devotion usually completes the conquest, and the wooed responds by going slowly up to him and caressing his throat with her bill. Occasionally, however, this astonishing effort is unsuccessful; the maiden is not impressed and stands off with utmost indifference.¹²⁸

Another bird whose mouth-lining is his

charm is the kittiwake gull, so named, says Newton, from the plaintive cries which are heard almost constantly where these birds congregate. This gull's mouth and throat inside, and even the tongue, are the most brilliant red. In this case the female takes a part, and both birds open their mouths to their utmost extent, turning their heads towards each other and uttering a shrieking cry.¹²⁹

As an example of the savage style of wooing by bullying, continued, too, after domestic life is begun, may be mentioned our familiar red-winged blackbird, who bullies his mate till I have no doubt she is relieved when, after the young are on the wing, he leaves her and returns to his bachelor life with a flock of his confrères. Perhaps, indeed, she plucks up enough spirit to drive him away.

Wooing by the chase is the method of some of the ducks and woodpeckers. The idea seems to be to tire out the chosen one, and make her accept him "to get rid of him," as it is sometimes said a human sister will do; for the too ardent suitor, sometimes accompanied by several rivals, chases her for hours till it seems that both birds must be exhausted.

A popular method of pleasing is by the dance: the long legs of cranes and ostriches appear to predispose to this form of entertainment, but length of limb is not indispensable. The dancing parties of our prairie hens have often been described, as has also the more remarkable performance of a South American bird, the cock-of-the-rock, and Wallace's description of the dancing parties of the bird of paradise, which may or may not be wooing, are well known.

The ruff, a bird of Europe resembling our sandpipers in his normal state, is adorned at this important time in his life with a large ruff of feathers. His performance takes the form of a mock fight, in which he transforms himself into a very ridiculous figure. The ruff expands into a frill that sweeps the ground and forms a shield to protect his body from accident while exchanging incivilities with a rival.

A pretty feature of bird attentions, which may often be seen among captive birds as well as among the free by close observers, is that of tendering an offering to the chosen one. The gift is neither flowers nor candy — the

human equivalent — but a delicate morsel of food, which the suitor places tenderly in the mouth of his “ladie-love,” and which she receives often with the wing-fluttering of the nestling, and sometimes with a sort of “baby-talk.” This has been seen in the arctic skua by Mr. Selous, and many times in more familiar birds by myself.¹³⁰

It remains for the youngest continent to furnish examples of wooing that emulate the ways of civilized man. Heretofore we have seen mostly only the showing off of the lover, while the beloved looks on as a spectator, but now we come to the more advanced way, where the wooed takes part in the amusement. The Australian bower-bird is the suitor who builds a dance-hall and enjoys it *with* his prospective partner. The structure itself with its remarkable adornments has been described, but it is only of late that the birds have been seen to use it, running after and chasing each other through it, picking up and carrying about a gay feather or a bright leaf, with fine plumage-display and varied cries.

More elaborate even than the bower of Australia is the tent-shaped erection of a bird

of New Guinea named the gardener-bird. Though classed as a bird-of-paradise, he is plainly dressed himself. He "builds at the foot of a small tree a kind of hut or cabin some two feet in height, roofed with orchid-stems that slope to the ground, regularly radiating from the central support, which is covered with a conical mass of moss, and sheltering a gallery round it. One side of this hut is left open." Before the entrance is arranged a lawn of moss, and in this are placed flowers and other decorations which are kept fresh by constant renewal. There is no doubt that this is a hall of pleasure and not the nest.¹³¹ Of this bird's wooing ways nothing has been reported. The human residents are of a low grade and more civilized observers do not often go there.

Shall we not on the whole agree with Shakespeare that —

The lunatic, the lover and the poet
Are of imagination all compact?

VIII
HIS HOME

The conscious happiness of the love and wedded life of birds appears to us worthy of our envy. — ALFRED EDMUND BREHM, *From North Pole to Equator*.

Rooks are paired all the year. On the ground couples alight near each other, on trees they perch near each other, and in the air they fly side by side. — RICHARD JEFFERIES, *The Open Air*.

All our endeavors or wit cannot so much as reach to represent the nest of the least birdlet, its contexture, beautie, profit, and use. — MONTAIGNE.

VIII

HIS HOME

THE home life of the bird is a subject on which few persons, if indeed any, are competent at this day to speak. For, contrary to the common opinion, the home life, that is the associated life of the family, continues through the year with many, possibly, as we may discover later, with most, species. This fact of the permanent union we are just beginning to recognize, and it must be left to future observers to learn more.

We can however speak with some confidence of the bird's home at the only time in his life when, according to our ideas, he has a home, that is, a fixed habitation, — the time when the demands of helpless infancy necessitate a cradle.

This period of his life is especially interesting to the student of bird habits, for it is his opportunity. At that time alone is the bird confined to one locality, where he may always be found ; and in addition to that advantage,

the emotions of the season and the cares and anxieties incident to family life bring out the individuality, the charm, the idiosyncrasies of his character. Without a knowledge of that time one whole side of the bird's nature is unknown to the student.

Noteworthy, also, is the fact that at this period of the bird's life the fortunate student may hear the wonderful performance which I have always called the whisper song. In my experience, this low undertone song whenever I have heard it—and in my sort of study I have had that supreme happiness many times—has been the most rapturous song of the bird who delivered it, having an absolutely inexpressible tenderness of tone and manner that moves one to the depths.

One is not surprised to hear these ineffable strains from the reserved birds of our wild-woods, the hermit, olive-backed, and Wilson's thrushes, whose serene evening song is one of rapture and repose, or from that mysterious family the solitaires, whose marvelous ordinary song arouses the enthusiasm of the most prosaic listener; but a similar rhapsody from the matter-of-fact oriole, the somewhat clumsy

but charming grosbeak, the rollicking blue jay, and even from our familiar everyday friend the robin, is a genuine surprise though a delightful one, and moves one to say with Michelet, "If he has not a soul, who will answer to me for the human soul?"

A few writers have spoken of the whisper song. To cite but one, Mr. Warren, who made close acquaintance with a Canada jay during the nesting period: "On pleasant days he trilled from a spruce top a song of sweetly modulated notes wholly new to my ears. He always sang *sotto voce* and it required an acquaintance with the songster to realize that he was the origin of those notes which seemed to come from somewhere up in the towering pines which surrounded this strip of swamp, so lost was the melody in the whispering, murmuring voices of the pines."¹³²

It may be thought that in the nest of the bird there can be no resemblance to the elaborate structures we call our homes, but it is an interesting fact that when closely studied there will be found as much variety in them as in human habitations. From the "dug-out," or underground hut, to the castle with

its security, one may match the bird with the human dwelling, and, considering the difference between the wants and the resources of the two races, the discrepancies will be found surprisingly small.

The structures may readily be classified. Beginning with the underground dwelling corresponding to the "dug-out" of the West, most familiar perhaps of the little homes excavated with so much labor and care in the ground is that of the common belted kingfisher. One would never suspect that this beautiful fellow in his dainty blue and white suit would choose to dig out a retreat in the solid earth. The entrance to the kingfisher home is usually in the bank of a river or pond, from which he gets his food. The doorway is three or four inches wide and often concealed by bushes or weeds. From the entrance a passage six or eight feet long, often turning this way or that to get around stones or roots, leads to the living-room. This is round with a domed roof, and must be secure from all enemies except man. It is sometimes carpeted with the snowy bones and scales of fishes that have furnished the

meals of the family, and when light is let in upon it, presents a beautiful appearance, looking like frosted silver.¹³³

Our comical little burrowing owl (wrongly named, since he deserves no credit for the dug-out in which he lives) avails himself of the labors of a strenuous neighbor. This is the prairie-dog, who, having, like some unfortunates of the human family, a "mania for work," excavates long passages with many rooms, far more than suffice for his modest needs, and the canny little owl, with the wisdom popularly attributed to his family, calmly establishes himself in one of the superfluous chambers, and there rears his droll little ones, maintaining, so far as known, the most amicable relations with his landlord. It is whispered, however, that he has been seen to assume superiority over his amiable four-footed landlord, and sometimes to hold his position at the entrance to their common habitation, even against the rightful owner.

Other dwellers on the wide prairies not so welcome nor so well-bred as the owl also covet these snug retreats. One is the rattlesnake. It was formerly supposed that the three — beast,

bird, and reptile —dwelt together in harmony under one roof, so to speak. But later observations have dispelled that pleasing illusion, and it is now known that the reptile, at least, is an unwelcome guest. A man who had been a cowboy and lived on the desert for years, observing with great interest the animal life about him, is authority for the statement that when a rattler gets possession of a prairie-dog burrow, the animal moves out, and fills up the doorway with earth, crowding it down tightly, and thus making the intruder a prisoner. As the snake has no tools for digging, the usurped lodging is supposed to be his grave.

Another bird who chooses the safety of underground and digs out his retreat himself is the sand martin, or bank swallow, whose tunnels, or the entrances to them, are a common sight in suitable banks.

That droll little fellow creature, the puffin, is also a lover of solitude and darkness. His enormous beak, indeed, seems made for digging, and, with his formidable foot to aid, he is said to throw out the earth in a shower as he works his way in. It is recorded that the tunnel is made by the male, who, lying on his

back, digs with the beak and casts out the earth with his feet. Wonderful, indeed, are the nesting-time ways of these social puffins. A celebrated German naturalist who visited the Bird Bergs of Lapland gives a graphic account of them. One of the most interesting settlements was a hillside riddled with the excavations of the birds. As the travelers stepped on the ground, birds began to come out of their doors; hundreds of thousands, he says, filled the earth and the air. Razor-billed auks and guillemots were there in myriads also. He was absolutely confused and made dizzy by the sight and the sound. These birds, who look so stiff and wooden in pictures, he found to be lively, graceful, and in constant motion. They paid no attention to him, but when a bird of prey came to see what all the excitement was about, they recognized him at once, and threw themselves as one bird into the sea. These hardy fellows, except when nesting, are said to spend their whole lives in the open sea, defying the severest winter and the most violent storms.¹³⁴

Some of our little brothers who live on the ground make their homes less conspicuous

by forming a roof over them, producing a domed nest. Among the most interesting is the water ouzel, or American dipper, of the western side of the continent. He is eminently a water-lover, and is found among the mountains, in and about the streams that dash and tumble down their sides. In such places the ouzel is a permanent resident, never migrating to a warmer climate, as happy in the cold as in the heat, as much at home under water as over it. He runs and flies and picks up his food at the bottom of the rushing brooks as easily as other birds do in the air, and, according to his warm lover Mr. Muir, he sings the year round, even on the ice and in blinding storms, when his feathered neighbors seek the most sheltered spots and sit shivering in patience for the storm to pass.

John Muir has found a congenial spirit in this bird and has written an account of him which is one of the most exquisite tributes to a bird I have ever read.¹³⁵ The song of the water ouzel is a true water song, the babble of brooks set to music. And the nest is extremely picturesque, being a small, covered hut of green mosses, placed where the spray of a

fall sprinkles it and keeps the moss green and growing and ferns and other damp-loving plants fresh beside it. Sometimes the little home is behind a sheet of falling water, through which the bird must dash at every visit. But falling water is a joy to this lovely bird. Dr. Merriam told me of an ouzel near whose home he once camped. On tossing from his cup a few drops of water the bird flew to meet them as if he wanted to get under the little shower. To test it, the Doctor tossed out more water, when the bird again dashed out into it, and as long as he continued the experiment, the bird never failed to respond. He is a bird that is not afraid to go wherever a stream may go, and to sing wherever a stream sings, says his lover Mr. Muir.

The oven-bird of our Eastern woods makes a domed nest so well concealed that it is one of the most difficult to find. The roof is formed of dry leaves, etc., gathered from the forest-floor, of which it has every appearance of being a part.

Another familiar bird who builds a domed nest, though not on the ground, is the magpie of the West. This bird places the structure

in a tree, a great mass nearly as big as a bushel basket, with a roof almost as solid as the nest-support itself, and an opening on each side to allow of going in and out. It is curious and interesting to see a small grove of low trees — oak-brush it is called in Utah — with a number of these bulky nests near together, a sort of village, the magpie being a social bird, fond of neighbors.

In such a grove I once had the delight of being an unsuspected observer, — having concealed myself while the bird was absent, — and there I heard the magpie song, the sweet notes reserved strictly for the domestic circle.¹³⁶

Our common meadowlark makes the domed nest in the grass of meadows, and adds to its security by a long passage, often covered also.

The domed nests already mentioned might be said to correspond to the huts so common among the native races of Africa, but the red oven-bird of South America goes a step farther and builds an adobe house. The oven-bird begins building the nest a long time before it is wanted, so that it becomes very hard in the hot sun of that country. It

is made of mud mixed with bits of straw, horsehair, and fibrous roots. The walls are thick, and when well dried are almost as solid as brick. A central partition rises nearly to the roof inside, and in the back room the nest of soft grasses is placed.¹³⁷

At the opposite extreme from this heavy structure are the light and airy hanging nests, of which there are many. Every one knows the hammock of the orioles, — the Baltimore and orchard of the East and the hooded and Bullock's of the West, — woven of fine fibres and hung to the branch of a tree, or, in the case of the Western birds, often to the broad leaves of a fan palm.

A beautiful specimen of the hooded oriole's nest now before me is made of the loose thread-like fibres which detach themselves from the edge of the leaves of the fan palm, and are much used by the birds of southern California. It is ingeniously sewed to the under side of the broad leaf, holes being made and the fibre passed through and over the rib of the leaf. In this cosy nest a family was safely reared last summer.

In a country where snakes and monkeys

abound, there are hanging nests of more elaborate construction than those of our orioles. Such, for example, is that of a Brazilian bird, which is said to be suspended by a cord woven of long thread-like roots into a fabric of great strength. These birds are said also to choose trees already occupied by wasps and their nests, and doubtless these fiery fellows are a protection from monkeys and snakes.

The most curious hanging nest is reported to be made by a swift of Guatemala (*Panyptila sancti-hieronimi*), composed entirely of seeds held together by saliva, and by it hung from the under surface of a rock. The structure measures two feet long and about six inches in diameter, with the entrance at the lower end and the hollow for the eggs at the top.¹³⁸

An altogether unique nest, especially when contrasted with these elaborate woven structures, is that of the parula warbler, one of which is in my possession. It is in a hanging tuft of the long gray moss that grows on dead trees. The tiny bird pushes herself inside the selected natural tuft, draws together

a few of the strands to form a sort of cup, and, often without lining or other preparation, takes possession and rears her little family. So slightly is the moss disturbed that no one suspects a nest, and it is one of the most difficult of all to find by looking. Sometimes this bird makes a more elaborate home, and sometimes again she puts a lining in it, but perhaps the most usual form is that described, in which a family was safely reared a few years ago. The bird is plentiful in the spruce woods of northern Maine.

The domestic life of the sea-birds who live in great communities, sometimes many thousands together on an island, has been little studied, but is very interesting. The birds seem usually, so far as authentic accounts have been given, to live peaceably together, to be united against enemies, to help one another in trouble, and to adopt and rear with their own the orphans of the flock.

Many of these bird cities have been visited and described. Captain Ingraham has given us an interesting account of a flamingo city,¹³⁹ and Mr. Frank Chapman spent some time during the nesting season studying a flamingo

colony on an island on the Atlantic Coast. Hidden in a cleverly constructed tent made of a large umbrella with curtains, and placed in the heart of the city, he had an excellent opportunity to observe the birds and their manners, and, what was to his mind more important, to photograph them in all their eccentric movements. When the elders were abroad, Mr. Chapman walked about among the youngsters, which were, like civilized babies, dressed in white. All this time, too, he was collecting representative specimens of every age, with which to form a fine "bird group" in the American Museum of Natural History, which will show the home life of these remarkable birds for years to come.¹⁴⁰

Birds on unvisited islands are usually not afraid of man. When a party visited the island of Laysan in the Pacific Ocean the birds received them with indifference and even curiosity. Mr. Fisher says: "We were impressed by two striking facts,—the great numbers of birds and their surprising tameness. They seemed little put out by our presence, and pursued their ordinary duties as if we were a part of the landscape. . . . While we sat

working, not infrequently the little warbler would perch on our table or chair backs. . . . As for the sea-birds, there was scarcely a species that seriously objected to our close approach, or at any rate departed when we attempted to photograph them. . . . The albatrosses were astonishingly fearless, and would sometimes walk up and examine some portion of our belongings as if they had known us always.”¹⁴¹

Not all the residents of bird cities are so indifferent to intruders. A colony of Franklin’s rosy gulls in Minnesota visited by Dr. Roberts extended to him a startling reception, hardly to be called a welcome. But these birds were acquainted with the ways of ordinary visitors and knew what to expect. This was their reception: “With one accord the whole colony came streaming towards us, a few in the lead, but hundreds in the rear, until we were surrounded, and accompanied the balance of the way by an immense wildly excited escort that by every means known to gulldom protested against the intrusion and tried in vain to impede our further progress. The frenzied, distressed notes and the furious

dashes of the birds as they all but struck our heads excited both our pity and our admiration."

The doctor gives an interesting study of the ways of the gull babies, who even in the cradle are the most restless and uneasy of birds. "These pink-footed little balls of down now and then remain quietly in the home nest, basking in the warm sunshine, but more frequently they are no sooner dry from the egg than they start to wander. A few are content to go no farther than the broad, sloping side of the nest, and there they may be seen quietly dozing or tumbling about among the stems of the rushes as they explore the intricacies of their little island. The greater number, however, put boldly out to sea and drift away with the breeze. . . . A gust of wind a trifle harder than usual, or a bump against a floating reed stem, and over they go, bottom-side up, only to come quickly right again, dry and fluffy as ever.

"Their departure from the nests was apparently ever against the will of the old birds, and many were the scoldings and severe the punishments meted out to these venturesome

offspring. The frenzy of the old birds as the chicks neared the open lake was pitiful to behold. With might and main they endeavored to turn them back. . . . At last, their protests of no avail, a resort is had to more vigorous measures, and seizing the drifting chicks by the nape of the neck with the powerful beak, they are jerked bodily and roughly out of the water and, from a height of three or four feet, thrown as far as possible in the desired direction, this being repeated again and again, till the youngsters are at last flung into some nest, exhausted and bleeding from the blows and pinches inflicted by the sharp bills of the parent birds.

“So far as the disciplining and care of the young went, there existed a curious spirit of communism among these gulls. An old gull cared for whatever young gulls fell in its way, and when the stray chicks chanced to clamber up into a strange nest, they were, after a few admonitory squawks, welcomed as one of the household, and scolded, pecked, and fed, just as though the foster parent had laid the eggs from which they were hatched. Occasionally we saw old gulls already in possession of a

family twice the size to which they were entitled rushing out and pouncing upon other fresh arrivals, who were quickly hustled and jerked up among the others, until not infrequently ten or a dozen of these tiny balls filled the nest to overflowing. . . . Most jealously were these foundling asylums watched over, and many were the fierce encounters in mid-air when some marauding band dared to interfere. . . . A single gull, aided it might be by some accepted neighbor, fed, apparently without distinction, all these youngsters.”¹⁴²

Some of our common land-birds habitually live in colonies, such as grackles, chimney swifts, and swallows, while others adopt a common sleeping-place, generally in a bit of woods, where they collect by thousands and pass the night together. This is a well-known habit of our common crow, and it has lately been discovered that the robin has the same custom.

To those of us who live in a country of trees these seem the proper place for nests, and most of our smaller and weaker birds do select a tree or a bush in which to set up their home. So numerous are they and so

well known by every one that it is unnecessary to describe them, from the bulky mud-lined nest of the robin to the fairylike plant-down structure big enough only to cradle a pair of hummingbird babies.

Probably the largest of tree nests is made by the osprey, or fish hawk, one nest often filling the whole top of a tree, and containing sometimes more than a cartload of materials of the most incongruous character, from good-sized sticks of wood to a boy's toy boat with all sails set.

Perhaps the safest, if not the most comfortable, of our bird homes are the wooden castles of the tree trunks made by woodpeckers, but beloved and constantly appropriated by many other birds. I have mentioned the astuteness of the Western burrowing owl, who avails himself of the labors of the prairie-dog. In like manner the screech owl and his smaller relatives find comfortable quarters in the abandoned castles of the different woodpeckers, for these workers in wood, it is said, rarely occupy a nest the second season. The elf owl of the West finds satisfactory lodgings in the stems of the giant cactus, which grows thirty

or forty feet high, and is generally well supplied with deserted woodpecker homes.¹⁴³

The most singular of homes in a tree trunk is made by an African bird, the hornbill. A wooden castle alone is enough to ensure safety to our birds ; but in that land of snakes and long-armed monkeys something more is needed. Accordingly, when the hornbill mother is ready to sit, she retires to her domicile, and her mate brings mud with which he walls up the entrance, leaving an opening only large enough through which to pass her rations. This done, the outside partner devotes himself to the work of furnishing supplies, and probably, like some of the human species with nothing to do but eat, she gives her mind to it, and disposes of a large amount. At any rate it is said that she comes out of her prison very plump, while her hard-worked mate is worn to skin and bones.

This bird is famous for another eccentricity, which has puzzled the wise men. He has the strange habit of throwing up the lining of his gizzard when it is full of the fruit he has gathered. Whether this is a convenient market basket in which to bring home supplies to

his imprisoned household is not known, but the fact is well authenticated.¹⁴⁴

Some birds are as fond of decorating their homes as we are ourselves, though, since they are confined to materials they can find, the results often seem to us grotesque. For example, a golden eagle is reported by Mr. Taylor to have shown a fondness for a "soap-root" in his nest. At least for two successive years he used this remarkable decoration.¹⁴⁵ And the bald eagle, according to Dr. Ralph, uses sometimes a green pine branch or a ball of grass or some such thing.¹⁴⁶ More to our taste is the nest of a shag covered all over with a plant bearing small blue flowers.¹⁴⁷

The nest of a sea-bird, the red-faced cormorant, is composed of sea-mosses, with a few quill feathers of the larger gulls stuck in the sides, says Mr. Palmer in his Report on the Pribilof Islands ;¹⁴⁸ and a cormorant of the Pacific Coast ornaments the outside of the nest with bright-colored seaweed, which is brought up from the bottom, sometimes where the water is fifty feet deep. It is said that a neighbor who cannot, or at any rate does not, collect for himself (or herself) this dazzling material still

admires it ; and the cormorant is obliged to watch closely to prevent his cherished decoration from being stolen by the gull.¹⁴⁹

Land-birds show fondness for decoration also. A robin in Pennsylvania made the whole nest of flowers and white stems of everlasting, and it may now be seen in the Philadelphia Academy of Sciences. Other birds have been known to build entirely of flowers. Miss Hayward, an invalid who studied birds from her window, saw one pair build a nest of the blossoms of the sycamore and sprays of forget-me-not, and another — an English sparrow — cover its nest with white sweet alyssum.¹⁵⁰

The yellow-throated vireo makes a beautiful hanging nest ornamented with lichens of several colors gummed upon the outside. It is said that sitting begins when the body of the nest is finished, and the male occupies the time in ornamenting it while his mate is thus occupied.

Mr. Hudson tells of an English sparrow who brought to his sitting mate sprays of laburnum blossoms, neatly cut off at the base, from a tree sixty yards away. Some sprays were used to decorate the nest, others placed

on a window-ledge to be tossed playfully about.¹⁵¹

The nest of a shrike described by Mrs. Eckstorm was made of rough materials, but lined with carefully selected hen feathers from a neighboring poultry-yard. From the mass of brown and black feathers in this yard the bird had selected only the Plymouth Rocks, and around the edge of the nest had fastened upright a row of feathers that curled over inward so that the bird was sheltered and almost hidden by them as she sat.¹⁵²

A California bird, Anna's hummingbird, has a material for nest-building so lovely that the whole nest is a decoration. This is the soft feathery blossoms of the eucalyptus, or blue gum tree.¹⁵³

There are eccentrics among birds as among people, and the curious nests which occasionally come to light make this plain. Nests have been found in old cans, broken crockery, saucepans, hats left hanging, bags and baskets, and it is well known that the English sparrow will put a nest into any cranny he can find. I once found a wren sitting on her nest inside an iron hitching-post, using the

hole left for the hitching-strap for her entrance, while the nest itself was, of course, at the bottom, two feet or more below. How she could get her young folk out was a problem which, to my regret, I was unable to stay to see solved.

A thrasher in Arizona selects a terrible place for a nest, though doubtless it is safest from enemies. It is in a sort of cactus that is set with countless spines and virtually impenetrable to man or beast, — “ten millions of cambric needles set on hundreds of loosely jointed spindles woven so closely together as apparently to defy penetration,” says Mr. Palmer. But the birds go in and out with ease. Spines around the nest are pulled off, but this is not always sufficient, for dead young birds are found tangled in the mass. Occasionally a nest is found with a passage through the spines built of sticks.¹⁵⁴

Mr. Forbes tells of a certain tern who puts her egg on the leaf of a young cocoanut palm at a time when the leaf has turned down till nearly at right angles to the stem. The egg is on a narrow place between two leaflets on the summit of the arch of the leaf,

where it rests apparently securely, not being dislodged by the swaying of the leaf in the wind. But the leaf goes on drooping more and more till it falls. However, before this catastrophe the young bird is usually, if not invariably, hatched and safely on wing.¹⁵⁵

The Canada grouse has a queer way of preparing her nursery. She scratches out a little hollow and begins to lay her eggs, before touching any nesting-material. After three or four eggs are laid, every time she goes to the place, when leaving she picks up straws, grass, and leaves, or whatever is handy, and throws it backward over her head as she goes, and by the time the set of eggs is complete she has a pile of stuff about them. She then begins to sit and occupies the long hours in reaching out round her, gathering in the material and forming it into a nest, so when the young are hatched there is a deep, cosy cradle for them.¹⁵⁶

The most elaborate of bird nurseries is made by a resident of Africa, the umber-bird or hammerhead, a bird about the size of a raven. The nest is sometimes six feet in diameter and is placed in a tree, not far from the ground. It is made of sticks stuck together

with clay, is hollow, and contains three rooms, with holes between them for doors. The inner room is the nursery, and is furnished with a soft bed. The middle room is the larder, in which the male stores food,—fish, frogs, lizards, etc. The outer room is for the master of the house, where he sits when not hunting, and keeps guard.¹⁵⁷ The natives are superstitious about this bird, since he is a night-lover and flits about in the dark, besides sometimes indulging himself in a mysterious dance.

Another enormous but very different nest is made by the talegalla, or mound-builder of Australia. The nest is a great mound or heap of stuff three or four feet high, with the eggs buried in it, and the sun or the heat of decomposition does the work of incubation. But the eggs are not deserted; the parents often uncover them and see that they are all right. When the young are hatched, they remain in their warm nest from twelve to twenty-four hours still under cover, and when they come out they run about at once. A pair of these birds in the London Zoölogical Gardens were furnished with materials for a nest,—leaves, earth, and grass,—and they built there.

The male began at the outside, grasping the materials in his large feet and throwing them behind him towards a central spot, gradually contracting the circle as he went on. A conical heap was thus formed three or four feet high, when both birds arranged it to their liking.¹⁵⁸

In contrast with these elaborate structures a few birds make no nest whatever. Some sea-birds carry the single egg between the thighs until it hatches; our own whip-poor-will and night hawk disdain a nest, and indeed the latter of late years contents herself with the gravel roofs of city houses.

IX

HIS AMUSEMENTS

The life of the birds is beautiful and free all the year. It is the joyful life of the birds that has made their songs so grateful to us. — W. WARDE FOWLER, *Summer Studies of Birds and Books*.

The joy in life of almost all animals and birds in freedom is very great. You may see it in every motion. . . . Watch the birds in spring; the pairs dance from bough to bough and know not how to express their wild happiness. — RICHARD JEFFERIES, *Wild Life in a Southern County*.

IX

HIS AMUSEMENTS

No one who has eyes to see can doubt that young creatures delight in play. Not only is the truth borne in upon us every day and hour by the kittens and puppies who share our homes, but we see it constantly in our own nurseries, and no less in the young tenants of the barnyard. The fact is the same in the world of feathers, though, for lack of opportunity to observe, it is not so well known. Proof in plenty is not lacking, however.

It is, of course, with the feathered folk at liberty in a house that I have seen the most playfulness, for happily their wings cannot bear them out of sight so readily as can those of their wild brothers. I have seen birds amuse themselves by the hour with a bit of string, a marble, a moving toy, a scrap of paper, the pins in a cushion, and many other things. But much more is to be seen by the close observer among the wild and free.

“Young birds,” says W. Warde Fowler,

“play like kittens or like fox-cubs. The student of birds who sighs when the breeding-season is over and the familiar voices are mute, is consoled by the sight of all these bright young families, happy in youth, liberty, and abundance.”¹⁵⁹

“We see,” says Hudson, “that the inferior animals, when the conditions are favorable, are subject to periodical fits of gladness, affecting them powerfully, and standing out in vivid contrast to their ordinary temper. And we know what this feeling is,” he goes on,—“the intense elation which even civilized man occasionally experiences, more especially when young. There are moments when he is mad with joy, when he cannot keep still. Birds,” he continues, “are more subject to this joyous instinct than mammals and there are times when some species are overflowing with it. As they are so much freer than mammals, more buoyant and graceful in action, and have voices so much finer, their gladness shows itself in a greater variety of ways, with more regular and beautiful motions and with melody.”¹⁶⁰

“My experience,” the same writer says in another place, “is that mammals and birds

with few exceptions — probably there are really no exceptions — possess the habit of indulging frequently in more or less set performances.”¹⁶¹

It has been assumed that all these exhibitions of joy or pleasure belong strictly to the wooing season, and are intended solely to aid in the winning of mates, but later developments and a better knowledge of their lives have caused a change of opinion, and it has become evident that it is pure joy and natural spirits that animate the birds in their strange and often, to our view, grotesque performances.

The tendency to play in the youth of men and animals has aroused serious interest in students of life. Several theories have been suggested to account for it. An interesting one comes from a German writer, who, after declaring play to be merely practice to develop the powers of body and mind, goes so far as to assert that animals have a period of youth for the especial business of play, that is, for the purpose of training themselves, so that when they come to cope with the serious affairs of life their powers shall be under their own control. In other words the young ani-

mal—human, bird, or beast—does not play because he is young, but he has a period of youth because he *must* play.¹⁶²

This gives to play a biological significance not heretofore accorded to it, which should be a comfort to the mothers of boys, and which warrants our giving some attention to it in the development of the bird.

Most popular with birds, as with boys, are movement plays, and with feathered youth, as with human, they are usually accompanied with much noise. The most simple and quiet game is swinging, a favorite amusement with birds. Not alone the caged, whose opportunities are limited, but free birds have often been seen enjoying it. All of the titmouse family, both in our own country and in Europe, seem particularly fond of it. With the black-capped titmouse, our familiar chickadee, it is his best-known and almost constant sport, and of his European cousin Jefferies says, "A dozen or more titmice are often seen . . . hanging head down to a drooping branch for an hour at a time, swinging in the wind and chirping and calling in the merriest tones."

A bird I once had in freedom in the house

chose for his swing the loose ends of a cardboard map which hung on the wall and was so warped that a corner stood out. The bird would alight on this projecting corner with a violence that made it swing back and forth several times. When it became quiet he would fly around the room and come down on it again with the same effect, and continue the amusement for a long time.

Another inmate of my bird-room, a Brazilian cardinal, a beautiful high-spirited fellow in soft gray with a brilliant scarlet crest, passed many of the tedious hours in flying up to the ceiling, turning a somersault, and returning to his perch, doing the whole so quickly that it was almost impossible for the eye to follow him.

Mr. Bolles assures us that his pet owls were very playful, and it is well known to observing keepers of parrots and cockatoos that playthings are necessary to their happiness. If these are not supplied by an intelligent mistress, the bird will find something for himself, — a child's ball, a bunch of keys, even one of his own stray feathers. Many an exasperated housemistress can testify to the ecstasy of one

of these birds over a workbasket left unguarded, and the wreck which follows their play.

“Owls are in reality gay-hearted creatures, as full of fun and frolic as monkeys,” affirms the “Son of the Marshes,” who had tamed and studied numbers of these birds for years, adding, “better behaved, however, as becomes birds of their deportment.”¹⁶³

“My four meadowlarks,” says Mr. Scott, “had endless sports and romps together. A ball of crumpled paper was a plaything that gave endless delight.”¹⁶⁴

Mrs. Bignell’s robin, mentioned in a preceding chapter, was very fond of play, and there were several games that she used to play with him, into which he entered with spirit.

Mr. Nelson tells of ravens playing with sea-urchins on the shore, letting them drop from high up in the air and catching them before they reached the ground, apparently, he adds, in sport.¹⁶⁵ Turner, also, speaks of the same bird going through astonishing evolutions, turning sidewise somersaults, flying with one wing closed and the other straight up in the

air.¹⁶⁶ The same remarkable performance is noted by Selous in "Bird Watching."

The most interesting instance of solitary amusement is the dance, or, more correctly, the waltz, of the ostrich, which has been observed and described both in captivity and in freedom. "Ostriches," says Mrs. Martin, who lived among them for years, "have a dervish-like habit of waltzing when in good spirits. They go sailing along so prettily in the bright sunshine, their beautiful wings, spread and erect, giving them at a little distance the appearance of white balloons, but they have a sad tendency to get dizzy and fall, and often break their frail legs." Young ostriches three weeks old often waltz in absurd imitation of their elders, and generally end in a comical sprawl on the back.¹⁶⁷

To this account Professor Morgan adds his testimony. He says: "I once saw, on an ostrich farm in South Africa, six or eight of these camel-birds, as the ancients called them, waltzing together in full swing. They began by treading the ground with their feet and moving along sideways; then they began to revolve, at first slowly, gently beating time

with their wings, but soon quicker and quicker, until at length they were twirling round at a bewildering rate, threading their way in and out among each other, sweeping round and round with breathless rapidity.”¹⁶⁸

Less dignified than the dance of the ostrich is that of the crane, which has been described by many observers. This tall fellow violently ruffles his feathers, flings his long legs about, balances on the tip of his toes, gesticulates, twists his long neck, bending almost to the ground, spreads his wings, runs swiftly back and forth, and leaps over the head of another. Sometimes when his emotions fail to find expression in any of these grotesque antics, he he will fling himself upon the ground and kick and wriggle his legs in the air.

The performance of the little brown crane of Alaska is thus described by Mr. Nelson in his report on that Territory. One of these birds alighted near him and in a short time a second joined the first. Both then began loud rolling cries, and one opened the ball by turning his back upon his partner, making a low bow, his head nearly touching the ground, and ended by a quick leap into the air. He

then wheeled around, facing number two, whom he greeted with a still deeper bow, his wings hanging loosely at his side. The second bird replied with a bow and a leap, and then each tried to outdo the other in spasmodic starts and hops, alternated with comically grave, ceremonious bows and stilted hops and skips like the steps in a burlesque minuet.¹⁶⁹

Retaining their good spirits in captivity as well as in freedom, cranes indulge in this amusement, as reported by the superintendent of the Zoölogical Gardens in London. Says he: "Cranes are cheerful and lively, and their sportive activity renders them great favorites in captivity. Nothing can exceed the graceful movements of a group of these delightful birds as they dance and skip about, raising and lowering their graceful heads and necks, and, with outstretched wings, waltzing round each other with evident enjoyment. . . . A feather, a piece of paper, or a dead leaf is sometimes thrown up by them, and as it is carried about by the wind they jump after it and repeat the performance in great glee."¹⁷⁰

The most grotesque dancer is, perhaps, a bird of New Caledonia that has been studied

in the London Zoölogical Gardens. He is the kagu, about the size of a common hen, with long legs added. When his feelings require expression, he abandons his ordinary placid behavior and executes a variety of violent gesticulations of a most extraordinary kind, dancing round holding in the bill the tip of his tail or one of his wings.¹⁷¹

When these pranks fail to satisfy his exuberant spirits, it is reported that he abandons himself to buffoonery, thrusting his bill into the ground, beating his wings, and kicking violently, ending usually in falling to the ground in a sort of fit.

Another foreigner, a cassowary, nearly related to the ostrich, is a "kicker," though not in the newspaper sense. Dr. Bennett, a well-known naturalist, reared a pair of this species and kept them as pets among his poultry. They were very tame and interesting birds, about three feet high. Dr. Bennett thus describes their antics: "One morning I observed one rolling in the yard with feet uppermost. Suddenly it started up, leaping and racing around the inclosure, chirping madly and kicking trees and posts, often coming against

them with much violence, and at the same time kicking so high with both legs as to tumble on its back, and I feared it was seriously hurt. But it rose again and resumed the performance not injured in the least. This lasted about half an hour, during which every fowl that did not get out of the way was kicked aside without ceremony. When the frolicsome fit ended, the bird suddenly stopped and resumed its usual quiet walk about the yard as if nothing had happened."

The plodding brown creeper, most demure of birds, whose whole mind seems bent on searching out the eggs of insects in the crevices, has been seen engaged in the most giddy waltz, whirling around like a top for a long time. Even the charming purple finch expands his plumage and executes a dainty and exquisitely graceful dance. Our own blue jay belongs also to the dancers, although his movement is peculiar, being mostly of the body, accompanied by a soft, rapidly uttered note, while his feet are still.

The antics of the English cousin of our jay resemble, says Hudson, Wallace's description of the amusements of the bird of para-

dise. "The jays gather in a tree in numbers, in great excitement," he says, "perpetually moving, jumping and flitting from branch to branch, springing into the air to wheel around or pass over the tree, all apparently intent on showing off their various colors."¹⁷²

One would hardly look for playfulness among the large birds, to whom a dignified deportment seems more suitable, yet one of the largest of the bird family, the condor, — who sails round in the air thousands of feet above the highest peaks of the Andes, — indulges in a little dance, and, with head sunk on breast and wings wide spread, circles round his mate to an accompaniment of strange sounds.¹⁷³

Our familiar marsh hawk also shows a particularly playful disposition by executing cloud dances, coming down from a great height in a sort of dizzy whirl, turning over and over half a dozen times in succession; again, turning head down, fixing his wings in a peculiar position, and descending twenty or thirty yards with a swift screw-like motion.¹⁷⁴

"There is another sort of human play, into which higher æsthetic feelings enter," says

Mr. William James. "I refer to the love of festivities, etc., which seems to be universal in our species. The lowest savages have their dances. . . . The various religions have their solemn rites and exercises, and civic and military powers have processions, etc., of divers sorts. An element common to all these ceremonial games, as they are called, is the excitement of concerted action, as one of an organized crowd. The same acts, performed with a crowd, seem to mean vastly more than when performed alone. . . . There is a distinct stimulation at feeling our share in the collective life."¹⁷⁵

This seems to be true in the bird world also. Hudson tells us of the spur-winged lapwing of South America, a bird about the size of our common crow, who has a remarkable dance, called by the natives a square dance or quadrille. The birds go about at all seasons of the year in pairs, united "for better, for worse," it is supposed, and the performance requires three individuals. It begins by one of a pair leaving his mate and joining another pair, who advance to meet him with joyous cries, then place themselves side by side

behind the visitor. The leader starts off in a rapid march, shouting out single notes at intervals, while the pair behind follow closely in his footsteps, uttering a continuous cry like a drum roll. When the march ends, the leader lifts his wings and stands motionless, and the two behind, with puffed-out plumes, lean forward and touch the tips of their bills to the ground. They stand thus a short time and then the performance is over, and the leader returns to his mate.¹⁷⁶

The same writer describes the droll play of certain rails of that country, birds about the size of the domestic hen, who live in swampy places among the rushes. They seem to have a regular meeting-place on a small bit of level ground hemmed in by the rushes. The play begins by one bird uttering a loud cry, upon which all the birds around hurry to the meeting-place and begin to shout and scream as if in agony, rushing from side to side, apparently gone quite mad, wings waving, beaks wide open and held straight up. This performance continues for three or four minutes, when suddenly all stops, and every one returns to his own business.¹⁷⁷

Mr. W. K. Fisher, in his paper on the Laysan albatrosses, mentioned in a preceding chapter, gives an interesting account of the amusements of these birds. While many of the adults were off fishing, the rest entertained themselves with their endless dance and song, which they evidently carry on for their own pleasure. This once may have been courtship, but now it is pure amusement.

“From where we are seated we can easily count twenty-five couples hard at play. At first two birds approach each other, bowing profoundly and stepping heavily. They swagger about each other, nodding and curtsying solemnly, then suddenly begin to fence a little, crossing bills and whetting them together, sometimes with a whistling sound, meanwhile pecking and dropping stiff little bows. All at once one lifts its closed wing and nibbles at the feathers beneath, or rarely, if in a hurry, quickly turns its head. The partner, during this short performance, assumes a statuesque pose, and either looks mechanically from side to side, or snaps its bill loudly a few times. Then the first bird bows once and, pointing its head and beak straight upward, rises on

its toes, puffs out its breast, and utters a prolonged, nasal *Ah-h-h-h* with a rapidly rising inflection, and with a distinctly 'anserine' and 'bovine' quality quite difficult to describe. While this 'song' is being uttered the companion loudly and rapidly snaps its bill. . . . When they have finished they begin bowing to each other again. . . . In the most successful dances the movements are executed in perfect unison, which enhances the extraordinary effect."

When, on several occasions, Mr. Fisher walked in among them and began to bow low, imitating them, they would stop and gaze at him in astonishment, but, recovering themselves almost at once, would gravely return his bows and walk around him in a puzzled sort of way, as if wondering what sort of a bird he might be. "Far into the night," says the chronicler, "these pleasure-loving creatures seem to dance for the joy of dancing."¹⁷⁸

A more solemn and stately performance is what has been called the "dress parade" of the flamingoes on our coast. This has been described by Captain Ingraham. He was watching a flock of three hundred or more,

standing about four hundred yards from the shore. The show was started by a few of the largest birds beginning to march back and forth in the rear of the flock. In a few moments nearly every male joined the marching party, and as though at a signal every bird began to march, going beyond the line of the flock, then halted and shouted, making as much noise as possible. After a few moments of this pastime, they faced about and marched back to the other end of the line, halted, and repeated the shouts. This performance they kept up nearly an hour, and they marched almost as perfectly as a body of drilled soldiers.¹⁷⁹

Mr. Beebe of the New York Zoölogical Park bears testimony to the playfulness of the caracara hawks in captivity. He says that they are odd to grotesqueness, being endowed with a spirit of rollicking fun which is remarkable. He has watched the most unbird-like frolics between them, such as rolling over and over on the ground and turning somersaults until every feather seemed to be on end. In his studies in Mexico he found their wild brethren no less amusing, and no less funny

in their antics over the bones he threw out for them.¹⁸⁰

We must all remember what Mr. Wallace calls the "dancing-parties" of the birds of paradise in the Malay Archipelago, already alluded to, in which the full-plumaged birds collect in a tree in parties of a dozen or so. The tree selected is of wide-spreading branches but few leaves, thus leaving space for these gorgeous birds to get about without danger to their fine dress. They fly from branch to branch in great excitement, raising the wings over the back, keeping their exquisite plumes in constant vibration, stretching their necks and bowing their heads under all this golden glory.¹⁸¹

It takes the intelligence of the crow family to carry playfulness so far as a joke. Mrs. Martin, in her "Life on an Ostrich Farm," tells of some crows in Africa who were fond of perpetrating jokes on her dog, a collie. The birds would begin it by flying down and challenging him to catch them. The dog, always ready, would dash noisily after them, while they, enjoying the fun, flew tantalizingly along close in front of his nose, and only

just out of his reach. Sometimes they would settle on the ground, a long way off, and, apparently oblivious of him, become deeply absorbed in searching for something. The dog, deluded by the well-acted play, would make a wild charge. But the artless-looking crows would allow him to come within an inch of catching them, then, rising slowly into the air, would hover over his head, croaking contemptuously just out of his reach. When at last he was tired with running and flung himself panting on the ground, they would walk derisively all round him, come up defiantly close to his gasping mouth, and all but perch on him.¹⁸²

The same writer had a tame crow who was so full of fun that he could not be allowed in the house. One of his favorite pranks was a joke on a small animal of that country (South Africa) called a meerkat, a very intelligent and interesting pet not larger than a rat. The crow would come up quietly, seize the little fellow by the tail, carry him up into the air a few feet and then drop him. Then waiting a few minutes, till his victim had recovered his composure and was off his guard, he

would repeat the offense. The little beast chattered and scolded, showing all his teeth, but was powerless against the crow.¹⁸³

Mr. Turner in his report on Alaska, already quoted, relates this incident: There were two roosters kept in a yard together among a large company of hens. The elder — after the amiable manner of his race — beat the younger till he was half dead and one eye destroyed. The ravens in the neighborhood watched the fights with interest, and after the younger fowl was properly subdued, often played this joke on him. When they caught him walking about alone, away from the others, a raven would sail about over his head and suddenly drop down beside him with a loud cry. The unfortunate victim, unnerved, no doubt, by his repeated sufferings, would drop flat on the ground in terror, which seemed to give great pleasure to the birds. It was plainly a joke on their part, for they did not attempt to annoy him further.¹⁸⁴

A young friend, an observing student of birds, and a truth-teller, once saw a party of blue jays, who are among the most intelligent of their family (the crow family), which, says

Professor Newton, should be placed at the head of the bird tribe as the most intelligent of our fellow creatures in feathers. The jays, fifteen or twenty of them, were watching a party of other birds enjoying a feast of cherries. They stood quietly in a neighboring tree till all the cherry-eaters were busy, — robins, catbirds, thrushes, and others, — then suddenly they rose in a flock with loud cries and swooped down as if to annihilate the party on the cherry tree. Of course the victims rose in panic and scattered in all directions, when the naughty jays settled quietly again on their tree. The cherry-gatherers, finding it a false alarm, would one by one return to the feast, and when they were all busy again, the jays would repeat the joke.¹⁸⁵

On one occasion in the South, I was watching a party of buzzards sailing about in the air, and dropping one after another to the ground just outside the fence. I was wondering what drew them there, when a mockingbird flew across the yard and perched upon the fence close to them. For a few seconds he stood motionless, looking at them intently, then suddenly, with a loud war-cry, dropped

down among them. I was startled; I thought the great creatures would annihilate him. But to my amazement, the buzzards instantly rose in a panic, — twenty of them. The mocking-bird knew them better than I, and undoubtedly did it as a joke, for the next instant he hopped gayly upon the fence and burst into his liveliest song, wriggling his lithe body and flirting his wings and tail in a most expressive way.

At another time the same bird became interested in a brood of chickens following their mother about the yard. No doubt he planned another joke, for he dropped down in the same way among them. But a hen is a different bird from a buzzard, and, contrary to the common opinion of her, has a good deal of sense, and the performance was not so successful. She was wide awake in the defense of her chicks, and turned sharply upon the intruder, who discreetly returned to the fence. No triumphant song, no expressive posturing upon the fence, followed this failure.

One of the most interesting things I ever saw was a barn swallow playing with a shepherd dog, and I watched them for a long

time, as related elsewhere. The bird would skim over the earth just above the dog's head, while the beast ran madly after as if trying to catch him, though at the same time wagging his tail and evidently not at all in earnest. At one end of a certain ledge on which the dog ran, the bird would fly up and in a moment swoop down again, and fly back over the same run. They kept this up for half an hour, or as long as I could stay to look on. I was interested to see how differently the same swallow and his fellows (there were not more than six or eight of them in the neighborhood) treated a cat, whom they recognized, of course, as an enemy. They flew at her with cries, one after another in quick succession, sometimes almost touching her, and so disturbing her that she ran into the house to get away from them.

X

HIS MEANS OF DEFENSE AND ATTACK

It is a curious fact that although birds as a class are the most innocent, the most beautiful and musical of living creatures, they are more preyed upon by man and beast and crawling reptile than any other beings. — ELDRIDGE EUGENE FISH, *The Blessed Birds*.

It is unfortunate that those who know the least about wild life seem to have the most to say. If the jay did one quarter of the mischief he is credited with, he would surely have been exterminated long ago. — "A SON OF THE MARSHES," *In the Green Leaf and the Sere*.

X

HIS MEANS OF DEFENSE AND ATTACK

BIRDS have almost constant use for defensive arts, for no creatures on earth have so many enemies, and are so constantly persecuted, and they have developed some methods which indicate intelligence of no low order, a knowledge of human nature, and a wonderful appreciation of protective colors and attitudes.

It is the common method of the sticklers for "instinct" to account, or try to do so, for all actions of the lower orders in any way to avoid crediting them with intelligence. Who taught the bird who flings herself down before the hunter, limping and fluttering as if badly hurt, that in this way she can lure men and beasts away from her helpless young? Who taught her the value of protective color and of misleading attitudes in times of extreme danger? Does it not look a little like reasoning from experience? If not her own experience, that of some ancestor who has handed it down and made it an inheritance?

Trailing, that is acting as if badly wounded and almost helpless, to draw the enemy away from nest or helpless young in the hope of securing her, is one of the most common protective devices. We are all familiar with it in books, if not from personal experience. Ground-loving birds are notorious for the habit, and some of their antics are grotesque, and would be funny if they were not so pitiful, —such dire tragedy on the side of the bird.

One of the drollest, from our point of view, is that practiced by the whip-poor-will. Not contenting herself with going ahead with limping gait and fluttering wings, she flops around the enemy in circles, flapping her wings, spreading her tail, and uttering a cry like the whine of a young puppy. She has less need of making this display than have some other birds, for eggs and young, although lying absolutely uncovered on the ground, are so protected by their coloring that if once the eye is drawn from them, they are practically invisible.

Different from whip-poor-will tactics was the method of a mother cuckoo whom I once discovered in charge of an infant, evidently

on his first outing. Drawn by his insistent demand for food, I came unexpectedly upon the pair in a retired spot in the woods. At sight of me the mother instantly left her clamorous offspring and flew to the lowest limb of a tree near by, where she treated me to a series of theatrical postures, bows, feather displays, and acrobatic performances wonderful to see, keeping up at the same time a low cry which had instantly silenced the baby cries I had heard. Never for an instant taking her eyes off me, nor interrupting her remarkable demonstrations, the anxious mother very gradually, almost imperceptibly, moved away, a twig at a time, while I followed, fascinated and far more interested in her dramatic efforts than in finding her youngling. When she had thus drawn me several feet away from the dangerous spot, presto! she took to her wings and was gone.

A method similar to that of my cuckoo is said to be adopted by a bird of very different size and habits, the South American ostrich, or nandu. The poses and acrobatic feats of this bird take a form suggestive of a man in a desperate state of intoxication. With ruffled

plumage and wings helplessly flapping, he staggers about as if hardly able to keep his footing. Few hunters and no dogs are able to resist this beguilement, while the little family he is thus protecting, crouching flat and motionless upon the sand, are altogether overlooked and forgotten.

Certain sand grouse, relying upon their color resemblance to the sand-heaps among which they live, simply flatten themselves on the ground where they stand, and in this position they can with difficulty be distinguished from their surroundings.

A similar way was adopted by a downy woodpecker seen by Maurice Thompson, when in desperate need of protection from a pursuing goshawk. The small bird "darted through a tuft of foliage and instantly flattened itself close upon the body of a thick oak bough, where it remained as motionless as the bark itself. The hawk alighted on the same bough within two feet of its intended victim, and remained sitting there for several minutes, evidently looking in vain for the vanished bird. The woodpecker was stretched lengthwise of the branch, with tail and beak pressed

closely to the bark, its black and white feathers looking like a continuation of the wrinkles and lichens." "No doubt," says the observer, "those were moments of awful suspense for the little fellow, but its ruse succeeded, and the hawk flew away."¹⁸⁶

The elf owl, smallest of his family in America, hides himself by sitting very upright on a branch and looking like a part of it. Mr. F. Stephens found one in this attitude, who was holding one wing up before his face. He might not have been discovered but for the fact that the eyes just showed above the wing and caught the observer's attention.¹⁸⁷

Owls have wonderful power of assuming protective shapes. Mr. Bolles says: "My great horned owl can vary at will from a mass of bristling feathers a yard wide, swaying from side to side as he rocks from one foot to the other, to a slim, sleek, brown post only a few inches wide, with two jagged points rising from its upper margin. In repose he is a well-rounded, comfortable mass of feathers."¹⁸⁸

The control of owls over their feathers is

so great that they can draw themselves into a small compass and be completely hidden in plain sight. Their colors blend with a stump; they close their feathered eyelids, leaving only a crack, and sit perfectly still an hour at a time. Mr. Bolles once lost one of his tame owls in this way, and hunted far and wide while he was close beside him. This feather-control is not limited to a disguise. They ruffle or smooth, expand or contract their plumage in many ways. The barred owl, when stepping stealthily across a floor after a dead mouse drawn by a thread, tucks up his feathers as neatly as a woman holds her skirts out of the mud, and when eating, the feathers around the mouth are daintily drawn aside out of the way of harm, in a most convenient way.¹⁸⁹

Mr. Beebe tells of a remarkable case of taking advantage of protective resemblance. The birds were the red-and-blue-headed parakeets. "When frightened they always flew to a curious tree which, though bare of leaves, was sparsely covered with an odd-looking, long, and four-sided fruit of a green color. Under such circumstances they alighted all

together, and unlike their usual custom of perching in pairs, they scattered all over the tree, stood very upright, and remained motionless. From a distance of fifty feet it was impossible to distinguish parrakeet from fruit, so close was the resemblance. A hawk dashed down once and carried away a bird, but the others remained as still as if they were inanimate fruit. This silent trust in the protective resemblance of the green fruit was most remarkable, when we remembered the frantic shrieks which these birds always set up at the approach of danger, when they happened to be caught away from one of these parrot-fruit trees.”¹⁹⁰

Certain grouse of the far north, the willow ptarmigan, says Nelson, when they sleep under the deep snow, protect themselves from prowling enemies by flying directly down to the spot and diving under, not leaving a foot track anywhere. In this place the bird makes a little form in which he sleeps. In this way no enemy can be drawn to him by tracks.¹⁹¹

Feigning death shows, perhaps, even a greater degree of bird wisdom. Several birds are known to adopt this stratagem, and

though in some cases it may be, as has been suggested, a genuine faint from terror, in others it is plainly a trick with intent to deceive. For instance, the common humming-bird, the ruby-throat, while lying in the hand apparently dead, keeps very good watch for an opportunity to escape; a loosened hold is the signal for instant departure, and a slight and cautious unclosing of an eye indicates a mind alert for favorable chances.

The elf owl of the West makes no resistance when drawn from its domicile, lying limp as if dead. But if the detaining hand is opened for an instant to examine the pretty plumage it is up and away.¹⁹²

A common partridge of the South American pampas carries the drama a step farther. At first he resists capture by violent struggles. Then, as if exhausted, he gasps two or three times, his head drops, eyes close, body falls limp; plainly he is dead in the hand. But a loosening of the hold brings him instantly to life and a fight for liberty.¹⁹³

Some of our marsh-lovers are exceedingly expert at taking advantage of protective coloring, and display remarkable knowledge of their

personal appearance and their resemblance to the reeds among which they dwell. A certain heron will not only stretch up his long neck, turn his beak skyward, and remain quiet, to imitate the reeds, but he will keep his breast, the color of which is like a faded reed, towards the enemy, turning imperceptibly as the man walks round. A naturalist made some experiments with a bird enacting this little drama. He found him perfectly rigid, and when with his hand he bent the bird's head down to its natural position, it instantly sprang back like a steel spring.¹⁹⁴

The bittern is an adept at concealing himself in this way. His plumage is a perfect match for the swampy tangle in which he lives. He simply draws himself up long and slim, points his sharp beak upward, and stands like a statue, when one may almost touch him without seeing him. If, however, he is captured, he does not yield without a struggle. He can make a very good fight for liberty; and liberty and solitude in his beloved swamp are all the charms life has for him. When he assumes the defensive, he flings himself on his back, draws up his legs, and presents claws

and beak to the enemy. He will grapple like a cat, and his sharp beak is no mean weapon.¹⁹⁵

Many birds find their safety in hiding. The hiding-place of the divers is always at hand, and very cleverly do they avail themselves of it; they simply sink, down to their nostrils often, in which attitude some of them — cormorants, grebes, and others — will hold themselves for a long time, sometimes perfectly still, and again keeping so close to a boat that they cannot be seen by the sportsmen in it, who meanwhile are looking all about for the mysteriously vanished bird. The loon, marvelous master of his chosen element, simply swims under water out of the reach of pursuers, easily remaining below the surface a long time.

Land-birds, having no such convenient refuge at hand, have to depend on thickets to dive into or tree trunks to hide behind. The golden-winged woodpecker, says Audubon, escapes a hawk, who has his eye on him for a dinner, by scrambling round and round a tree trunk faster than the hawk can follow in the air.¹⁹⁶

Devices of mother birds to conceal their

young are various and sometimes exceedingly clever. A wild duck surprised by a bird of prey or other enemy with her ducklings around her, gives them a chance to hide by beating the water with her wings and thus sending up a great shower of spray. When the turmoil is over and the water still again not a duckling is to be seen. All have hidden and the mother is ready to fight, if need be. The same way is taken by the loon, it is said.

The famous skylark of Europe has a simple way of protecting himself against a bird of prey who attempts to capture him when on wing. He simply flies high above the enemy, and as he is able to reach a greater height than the larger bird and can remain on wing a long time, he can discourage or tire out his assailant and come down in safety to his home in the grass.

That in union there is strength has been learned by birds as well as by men. We are unfortunately too familiar with the fact that this is the method of the English sparrow, his tactics being always, in offense or defense, to assemble a mob. The coot carries out these tactics in a unique way. One of these water-

birds is a tasty morsel for a certain eagle, and when he starts down to seize one of a flock sailing about in their usual fashion, they simply close up together and all begin throwing up water with wings or feet, not only baffling the large bird, but so drenching his plumage that occasionally he has difficulty in reaching land.¹⁹⁷ The coot has been considered almost as much of a fool as the goose, and his name also is a synonym for stupidity. But it is no more true of the coot than of the goose. He is an intelligent bird, say those who know him well. Audubon long ago cleared the reputation of the goose.

One service to the bird world in general, performed by a few birds, is a sort of police duty, keeping watch for danger and announcing it to all within hearing. In some places these self-appointed guardians have been recognized and named by man. In England the common blackbird is called "the bellman of the woods," and he deserves the name, being always on hand, suspicious and alert, and giving timely notice in cries that bird and beast well understand.¹⁹⁸ Jays also sometimes assume this office.

But in our part of the world the robin is the alarmist, and when his suspicions are aroused nothing can tire him out. If one individual becomes exhausted by repeating his monotonous loud danger cry, he will be relieved by others of his kind. In trying to outstay this too persistent bird, I have seen one relieved by three or four others in turn. The warning outcry could not be stilled till every robin in the neighborhood was exhausted, nor even then, I believe, for so great is their *esprit de corps* that if necessary the robin population of a whole county would assemble to help.

As to offensive action among the birds, I find few who desire to fight or pick a quarrel. One of the most troublesome birds for his offensive attitude towards others is, again, I am sorry to say, our own dear robin. Excepting the English sparrow, he is the most pugnacious bird of a neighborhood, driving away many whom we should be glad to have about us, especially the shyer birds. So well is this fact known by real observers that no authorities are called for to substantiate my statement.

In southern California, where the robin's

familiar place about the house is filled by the mockingbird, he plays the same rôle, deciding what smaller birds shall or shall not reside in the neighborhood he has adopted for his own, and relentlessly driving away those he has decided shall not.

A case which has lately come under my own eye is of one of these birds, who claims for himself a table, spread every day for the feathered folk, in a neighboring yard. This table offers not only crumbs and bits from the family table, but bones not too thoroughly stripped of meat, fruit, such as grapes in their season and halved oranges when grapes are gone, and, perhaps more prized than all, a dish of water well sweetened with sugar, fresh every morning.

Of this bountiful daily repast a particular mocker claims ownership, and over it he stands guard the whole day. Some birds he allows to partake, but others — for no reason that his puzzled human neighbors can discover — he drives away with savage cries, and threatening motions. So inflexible is his determination to dictate who shall partake of the banquet that he rarely leaves his post.

Spring now stirs in his blood. Sing he must, and sing he does, but he does not forsake his charge. The joy of song with these birds is also a joy of motion, — they love to sing one moment on one perch, then fly ecstatically to another, from that to a third, or up into the air and float down in evident rapture, full of graceful and ecstatic movements, singing all the while. But my neighbor denies himself most of this delight of movement. He does occasionally yield an instant and flies into the nearest pepper-tree and from there to the roof of the cottage, but only for a moment, and never out of sight of his kingdom. He even seems to protest against a human visitor. He will remain at his post, often singing at the top of his voice, while a person walks up to within touching distance of him, and although keeping a very sharp eye on the intruder he will not leave his post nor stop singing, which is remarkable in this wise and wary bird.

A great deal has been said and is constantly repeated about the bellicosity of the king-bird. I have had exceptional opportunities for study of this much maligned fellow creature,

and, having from the first been especially anxious to learn whether all that is said of him is true, have given much time and thought to observing him. From all my experience of his ways in nesting-time and at other times in his life, this is my deliberate conclusion: Excepting when he has a nest to guard, he is one of our most peaceable birds, minding his own business as well as any bird I know, and better than most of them. And even when the responsibilities of paternity are upon him, he shows antagonism only to birds who encroach upon his own nest tree, and the meekest bird that flies will protect his own. I have even seen him, where two or three other birds had nests in the same large tree, living most amicably with them all.

All this with one exception. Against the crow he seems to have a settled grudge. I never saw a crow fly over a kingbird neighborhood without being chased.

The blue jay is another bird against whom all sensational pens are turned, but I am convinced from all I can learn both from much observation and from the writings of trustworthy observers that he is not nearly so black

as he is painted. I do not deny that he sometimes regales his family and perhaps himself with the eggs and young of his neighbors, but I do deny that this is his constant or invariable custom, and it has been amply proved by careful investigation that he is one of our most useful servants. Moreover, with how little grace come these accusations from our hunting and killing race!

A great deal of sentiment is lavished upon birds who are the prey of others, and the birds who prey — sportsmen should we not call them? — are execrated and usually destroyed without mercy by men who are engaged in the same business themselves. Hear the words of the writer who conceals his identity under the name "A Son of the Marshes," yet who is accepted as a trustworthy student of nature. He says: "It is an imperative law of Nature that one creature shall contribute in some way to the support of another. The question of cruelty is not to be considered for one moment, for predaceous creatures kill quickly, and before the hunted one can fully make out what is the matter, it is dead, practice in this as in other matters making perfect." ¹⁹⁹

The weapons of birds are more numerous than one would suspect. Not only beak and claws, but wings capable of delivering severe blows, spurs on feet or wings, which are effective in warfare, and legs, such as possessed by ostrich and cassowary, are able to administer killing blows.

Many authentic accounts of fighting birds could be given, but the fact that they do fight occasionally needs no proving. Some of the birds common about our houses have been seen to dispute and fight, even to the death sometimes, over the possession of a bird-house or a favorite nesting-place. Martins and swallows often come into collision with the bullying English sparrow. Even the "gentle blue-bird" shows himself a not contemptible fighter when it comes to the usurpation of his quarters by the impertinent foreigner.

A story is told of a common phoebe, — ordinarily a peaceable bird, — who found a robin in possession of the nesting-place she had occupied for several years. The quarrel between the two birds was noticed by the family under whose piazza the affair took place, but nothing more was thought about it till the fall,

when attention was attracted to the peculiar shape of the nest. Upon examination, the body of the robin was discovered walled up in the basement of the phœbe's nest, the phœbe having built another nest over the old one, completely enclosing her dead enemy.²⁰⁰

Mr. Baskett once saw two female blue-birds fighting over a nesting-place, while the two males looked on, fluttering around as if shocked. The defender of her nest bore her opponent down in a watering-trough. Though a little damp herself, she was able to fly. "Her mate followed her up to the home box, caroling of her prowess. But she looked indeed as 'mad as a wet hen,' and seemed to say by her manner that if he were half a man she would not have to do everything." The bird in the water was, however, unable to extricate herself, and Mr. Baskett had to rescue her and warm and dry her in the house.²⁰¹

A fight that is more than half pretense and amusing to spectators is that of a European bird, the ruff, mentioned in connection with the feather shows of courtship. The performance is thus described: "Fighting ruffs, now arrayed in their gayest dress, meet in combat.

With depressed head each directs his beak like a couched lance against the bright neck-collar which serves his foe for shield. They stand in most defiant attitudes, irresistibly amusing to us: they look at each other with their sharp eyes and then make a rush, each making a thrust and at the same time receiving one on his feathery shield. But neither of the heroes is in any way injured, and neither allows the dueling to interfere with less exciting business, for if one sees a fly just settling on a stem, he runs hastily, seizes the booty, and returns refreshed to the fray.”²⁰²

XI

HIS ODD WAYS

There is no doubt that birds have ways and reasons for them which man is very unlikely ever to be able to understand. — W. WARDE FOWLER, *A Year With the Birds*.

The antics of birds are so very curious and the whole subject of their origin and meaning is so full of interest that nothing which might by any possibility throw light upon them ought to be neglected or can be too closely observed. — EDMUND SELOUS, *Bird Watching in the Shetlands*.

XI

HIS ODD WAYS

IN this interesting study of the lives of our little brothers we are constantly coming upon strange and to us unaccountable habits, not alone of individuals but of whole families, which differentiate them from each other as completely as do their external forms, and offer to the student an almost inexhaustible field of interest and investigation.

What, for example, can be more extraordinary than that a bird should choose for his residence the home of a beast, sharing it with him, in fact, and living, it is supposed, in perfectly amicable relations with his neighbor in fur? This, as mentioned in another chapter, is the habit of our small owl of the Western prairies. This astute little fellow, having in charge the reduction of the insect hosts of that part of the world, where are no trees or other conveniences for a home, and having no equipment for excavation, simply takes lodgings in the unoccupied apartments of a neighbor pos-

sessed of a mania for digging, as already mentioned.

On account of the difficulty of study in the inhospitable land where this curiously assorted household exists, the relations of the two families have not been satisfactorily observed, but one interesting habit of the bird has been so often noted by travelers that he has been dubbed the "how-de-do" owl, and set up as a model of polite manners. This habit is his custom of bowing to strangers who approach him. His bows and dramatic poses have been described as extremely ludicrous by Dr. Coues and others, and, according to Mr. Frederic W. True, "polite as a prairie-dog owl" is a common comparison in the southwestern part of the country.

A curious habit which sometimes results in a droll tableau is that of a few birds, who when suddenly alarmed become instantly motionless in whatever position they chance to be, as if, as we commonly say, they were turned to stone. I have often seen this performance in the mourning dove. Come upon one of these birds unexpectedly and it will not move a hair's breadth. If the head is turned

one side, so it will remain ; if preening is in progress, the beak will not release the feather it is dressing. Lloyd Morgan says this is the custom with young pheasants. If startled by a sudden noise, they will instantly become motionless, even with one foot raised in walking, or the head turned one side.²⁰³

In the little-known country Alaska, ravens indulge in some peculiar wing feats that seem so impossible that if they were not reported by so reputable a witness as Mr. Turner and confirmed by observations in other parts of the world, they would inevitably be set down as "fake natural history" and met with the virtuous scorn of those of us who "know better." As mentioned in the chapter on amusements, the unnatural birds, being apparently in possession of all their senses, violate all the traditions by flying with one wing closed and the other held straight up in the air.²⁰⁴ A similar eccentricity is described on the other side of the globe, as noted in the chapter cited.

Another peculiar wing feat is reported of the rhea, or South American ostrich, who, when pursued by an enemy, and presumably putting forth all his powers to escape, holds

one wing straight up like a sail.²⁰⁵ And in fact this may possibly act as a sail in helping him on.

Still another wing feat is related of a hawk, Peale's falcon, who catches murrelets in Alaska and eats on the wing, hovering almost stationary for several minutes while holding the prey up to the beak with both feet and devouring it.²⁰⁶

We are accustomed very naturally to associate our winged neighbors with the air and the dominion thereof, but the freedom and ease of the water-lovers in their chosen element is quite as wonderful. The feats of that strange bird the loon, or great northern diver, are too well known to be repeated. More extraordinary are the performances of the water ouzel, or American dipper, a wholly charming bird of our Western mountain streams, who, lacking web feet, says Mr. Muir, does not swim much on the surface, but carries on his operations beneath the surface. On the bottom of the swift-running stream he seeks his food, through its rushing waters he flies with ease, using his wings as other birds use theirs in the air. Even

the strong currents of the rapids do not impede his course.²⁰⁷ One of the most delightful studies of a Western summer was of this attractive bird in his remarkable evolutions under water.²⁰⁸

Another bird to whom the water is almost his native element is the grebe, whose floating, water-soaked nest is well known. When a mother grebe, having her little flock in the water about her, is pursued, the youngsters, probably at her call, scramble upon her back, and she, by a quick upward movement of the wings, appears to clasp them against her body, then instantly dives below the surface. When, after a few moments, she reappears, the whole party will be seen still held in safety on her back.²⁰⁹

Life in and about the sea seems to have some mysterious effect on birds. They certainly exhibit remarkable and what to us seem unbirdlike eccentricities. The naturalist on the Challenger reports that on Kerguelen's Land the penguins of a certain species do not hop, as is the custom of most short-legged birds, but run with some speed, and when hotly pursued, throw themselves on their

breasts and struggle along, rowing themselves, as it were, with violent blows of their wings on the sand or mud, incidentally dashing plenty of mud into the eyes of their pursuers. Of another species, the king penguin, he says that they stand erect, their short legs being set far back on their bodies, and the youngsters are very droll-looking creatures in chocolate-colored down standing stiffly up with their noses in the air.²¹⁰

An interesting fact about another sea-bird, the kittiwake gull, is told by Mr. Brewster. The bird, being young and in confinement, was closely watched. He ate freely of his natural food, fish, but utterly refused to drink. No amount of fresh water tempted him in the least, and much concern was felt for his health. When, however, he was placed in a basin of salt water for the purpose of bathing, to the surprise of his keeper he instantly began to drink. After that he was regularly supplied with his native beverage, which he drank freely, and from that time flourished to the satisfaction of all.²¹¹

Many curious facts have been recorded connected with the sleeping habits of birds.

Bob White's clever arrangement of sleeping in a group with heads turned outward, so that in case of sudden alarm all would fly in different directions, is well known.

Our own chimney swifts sleep, as we know, clinging to the inside of a chimney. Audubon's interesting account of visiting a colony of these birds sleeping in the hollow trunk of a great tree has often been quoted.

Mr. Keyser, pursuing his studies at night, found sparrows sleeping in cosy bedrooms hollowed out under the thickly growing grass, with an entrance on one side, probably formed by field mice, he suggests, for their own comfort. He also found juncos under brush heaps, and other birds in thick, thorny bushes.²¹²

Birds who sleep on the water — and they are numerous — are always in danger of drifting to the shore, where lies their greatest danger. In the Zoölogical Gardens of London it has been discovered that ducks and other water-lovers have evolved a way of avoiding this danger. Tucking one foot up among their feathers, they keep the other in the water and gently paddle, with the result

that they revolve in circles and keep at a safe distance from land,—“a kind of sleep-walking turned to good account,” says Mr. Headley.²¹³

“The habits of birds in regard to sleep,” says Cornish, “are very unlike. . . . The sleeping-place . . . has nothing necessarily in common with the nest, and birds, like some other animals and many human beings, often prefer complete isolation at this time. They want a bedroom to themselves.” Sparrows appear to go to roost in companies, he goes on, but after a vast amount of talk and fuss, do not cuddle up together like chickens, but have private holes and corners each by himself. They like sleeping in the side of straw ricks, but each sparrow has its own little hollow in the straw.²¹⁴

Snow forms a welcome roof and protection from cold for many a bird. The stems of dead plants, says “A Son of the Marshes,” make a thick tangle which holds the snow till the whole mass becomes a solid roof, under which blackcock and other birds live.²¹⁵

One of the oddest of bird ways is that of the honey-bird of Africa, who is well known

to lead the natives to a tree containing honey. Mrs. Martin says he is "an insignificant looking little brown fellow who seems possessed of an almost uncanny amount of intelligence." He finds a hollow tree containing honey but is unable to get it out, so he wanders about till he meets somebody, when he flies around him, chirping and acting so strangely that he is often supposed to be an escaped cage-bird. If he is followed he will lead to the honey tree and wait until the honey is brought out, when he takes his share. The natives are careful to leave him a good portion. One day a man in that country was led by a bird of this species to his own bee-hive, close to his house.²¹⁶

There is no better place in which to look for odd ways than around the nests and among the young of birds, for their habits at this time in their lives differ almost as greatly as the color of their feathers. Some bird babies go on all fours, — creep, in fact. Such is the custom of the grebes, who find it hard to walk when grown up. Indeed, Mrs. Eckstorm, who has studied them in life, says they cannot walk. They are hatched in a raft

nest and hardly know life away from the water, hence the necessity, when out of their element, of calling the wings to aid the legs in getting about.²¹⁷

A curious custom of a few birds, especially, in our country, of the vireo family, is singing on the nest. Most birds are quiet when about the nest, but the vireos seem to be fearless little creatures, and besides indulging in song they readily respond to gentle human advances, even when engaged in the absorbing business of sitting. Mr. Torrey induced one of the family, a solitary vireo, to take food from his hand and water from a teaspoon while on the nest, and Mr. Walter Faxon went further and coaxed another, a yellow-throat, to take food from his lips. The offering consisted of canker-worms and black ants.²¹⁸

The habit of the European cuckoo of laying eggs in the nests of other birds is well known. There have been various theories to account for the strange habit. Richard Jefferies suggests that it is because the young cuckoo is such an enormous eater that no mother could possibly feed a nestful. That being the case we must admit that she is sensible in

calling in the aid of her neighbors, for she undoubtedly feels that one cuckoo is of more value than many small birds. And this is perhaps literally true, even from the human standpoint, for Mr. Jefferies says: "The effect of the cuckoo's course is to cause an immense destruction of insects, and it is really one of the most valuable as well as the most welcome of all our birds." ²¹⁹

The old story that bird parents poison the young who have been made captive has been repeated and denied many times, but there are some cases of the sort so well authenticated, says "A Son of the Marshes," that it must be accepted as true. Several instances came under his own observation. ²²⁰

Mrs. Wheelock also gives an account of a young chickadee she had taken from the nest and placed in a box with slats across to keep it confined. The old birds found it and fed it regularly for a while, apparently making efforts to release the youngster. Suddenly they stopped coming to the box, and the young bird died. On examination, she found a half-swallowed cedar-worm in its mouth, which seemed to be the cause of its death. ²²¹

The habit of "packing," as it is called, that is, of going about in flocks, is very interesting, and there is much doubt as to the object of it. If it is of use, why do not all birds pack? Many of them never merge their individuality says Jefferies, and others, as we all know, spend their whole lives in a crowd, notably most sea-birds; others, again, enjoy companionship only at night, as our common robin.

It does not appear so strange that birds of one species should live in neighborly fashion,—we are well accustomed to see them in flocks,—but that birds of many species should form large parties is a remarkable thing, to be seen only in the heavy forests of tropical countries.

In these wonderful forests, we are told by Hudson, birds have a curious habit of forming "wandering bands," composed of all the different species in the district. Excepting in the breeding-season, when each pair has its own domestic cares, these gatherings are formed daily, the birds beginning to assemble at nine or ten o'clock and continuing together till towards evening, when they sep-

arate to their several sleeping-places. This peculiar habit was first described by Mr. Bates. The grand party moves along peaceably together, each individual occupied in searching bark or leaf or twig for the food he prefers, while the sound of the crowd rustling the leaves and branches is like the sound of rain. In these lonely Amazonian forests for long intervals one will see no birds and hear no sound of their voices; then all in a moment the trees are full of them, all moving along industriously hunting for food, and in another moment all are gone and the forest is silent as before. Hudson says that smaller bands of this sort are met with in Patagonia.²²²

Mr. Cornish gives this interesting picture of life in these great forests. He says that in a tropical forest "life goes on on two levels. There is an upper story and a basement. The basement is the ground." Over it is "a roof of foliage so lofty that [one] can scarcely distinguish the forms of the branches which support its leaves, supposing that there were light sufficient to use his sight to good purpose. But the tops of the giant

trees are so dense that light scarcely penetrates, and the would-be explorer . . . has to tread the mazes of a temple of twilight, in which all life, light, and beauty exist, not below and within, but upon the roof. On the side remote from earth life goes on gayly and with such completeness that not only do the birds, insects, and monkeys enjoy a world of their own, but in the cups and reservoirs of the gigantic flowers and creepers water-insects and mollusks live and reproduce themselves without ever coming in contact with the ground." This is particularly the case in the island of Samar. Many trees are more than two hundred and forty feet high. "The forest animals — monkeys, lorises, and the like — live at a height of two hundred feet from the ground, that being the 'sunlight level,' below which direct light and heat do not penetrate. Invisible, on the top of this region, live the birds of the tropical forest; and on a still higher aërial plane, also invisible, float the raptorial birds which prey upon them."²²³

Quite as mysterious as some of the habits of birds, and far more startling, are the sounds

they are capable of producing. Among the oddest of the notes of our familiar birds is the song — if one may so call the grotesque medley — of the yellow-breasted chat. It is utterly unlike bird-song, a jumble of whistling, barking, cackling, and mewing sounds impossible to describe, uttered in a loud and quite uncanny voice, while the performer is closely hidden in the bushes. Seldom, indeed, does he come into sight during these eccentric performances.

In all my study of the chat — and he is such a puzzle that I have always given my whole attention to him whenever I have found him — in all my study I never but once saw him during his exhibition, and then the sight was quite unintentional on his part. He chose the lower branches of a dense hedge bordering a street, and in the house behind him, with the blinds closed but the slats slightly opened, at the window where I sat, I could see him perfectly. Keeping always to the lowest bare branches of the hedge, hidden from the street by a close fence, and unsuspecting of the spectator behind the blind, the bird poured out his repertoire of uncanny sounds

with perfect abandon, while I almost held my breath, not daring to move lest his abnormally sharp ears should hear, and put an end to the rare treat.

Another odd utterance is that of the famous bell-bird of South America. He is a white bird about the size of a jay and curiously decorated with a jet-black, spiral tube on the forehead. When filled with air, this tube stands straight up, but generally it hangs limp like a rag. His song is said to be simply a repetition of one clear note, and when uttered slowly, as he is fond of doing, it greatly resembles the toll of a bell.

Among unbirdlike sounds may surely be put the policeman's rattle of the kingfisher and the castanet performance of the clapper rail, as well as the rasping wheel-creaking of the American crossbill. Doubtless what we irreverently call the pumping of the bittern passes in the society of marsh land as song,—a strange gulping or retching sound, which has been described as a sort of "pump-er-lunk" repeated several times in quick succession. At some distance only one of the notes is heard, when the bird becomes the "stake-driver."

Several birds besides our own well-known mockingbird seek their inspiration in the notes of their neighbors. "The paradise bird," says Alix as quoted by Groos, "has . . . excellent imitative powers. . . . There is no sound that it cannot imitate,"—crows and barks and mews, bleats, howls, croaks, as well as songs of other birds.²²⁴

The young herring gull of our Atlantic coast has a querulous cry like a puppy in distress. The first time I heard it was on the rocky coast of Maine. I was sure some small dog had got into trouble among the rocks, and hurried down to the shore to see, and there found a squad of gull babies apparently on their first outing, with the parents hovering over and feeding them. Professor Lucas says the gull is ever complaining about something.

Many of the odd sounds made by birds are dismal to hear, sounding like cries of distress. Such are those of a bird called "crazy widow," of whom Hudson tells. This bird is found in the deserts of South America. It utters a long, melancholy scream, heard on still evenings a league away.²²⁵ And there is an African bird, the wood ibis, whose cry is like that of a

child under torture, — long-drawn, moaning cries alternated with sudden shrieks.²²⁶

Most celebrated among our own birds is the cry of that queer fellow mortal, the loon, which is said to strike terror into the heart of a stranger, resembling as it does a woman's cries of agony and despair. This is equaled by a bird of Patagonia the size of a thrasher, who has a cry like a burst of insane laughter.²²⁷

Waterton adds his contribution to the list of strange bird sounds. The bird is a goat-sucker of Demarara, whose voice is so remarkable as never to be forgotten. The startled listener who hears it for the first time might believe it to be "the departing voice of a midnight-murdered victim." It is a hopeless wail, beginning in a loud "ha! ha! ha! ha!" each note lower and the last scarcely heard.²²⁸

Even the love-notes of one bird, a shearwater, are described as "moans and sobs in soft, low tones, inexpressibly sad and weird."²²⁹

When these unpleasant sounds are uttered in chorus, they become truly terrific, such as in the case of a rail described by Mr. Hudson and mentioned in the chapter on amusements. And another of a Mexican bird thus noted by

a late writer: "Then a fearful voice arose, apparently coming from all directions at once. Cacklings, screechings, wheedlings, peals of uncanny laughter ! The screams of macaws dwindled to mere whispers beside this awful din. . . . One prominent factor in the medley was a most peculiar subdued humming which, beginning low, gained steadily in volume, until it ended in a shrill falsetto shriek. A more terrifying sound can hardly exist. The authors of all this uproar soon made their appearance, a small flock of dark, fowl-like birds, which we recognized as chachalacas. They flew from tree to tree or ran frantically round and round in circles upon the ground, uttering screams and the strange, humming cries." ²³⁰

Not all the chorus-singing of birds is unpleasant. Mr. Hudson tells us of the wonderful performance of the crested screamer of South America. These birds — "chakars" the natives call them — assemble in immense flocks, thousands of them together it is said, and, strangely enough, they prefer the night for their vocal displays. In their vicinity they are invariably heard at intervals all night,

—“a tremendous evening song . . . louder than the sea thundering on a rocky coast,” says Hudson. These birds are interesting for another peculiarity, — they are easily tamed, take kindly to the poultry-yard, and are especially interested in the young of the party. Mr. Hudson tells of one who, to his great delight, was placed in charge of a party of chicks. Nothing could be more droll than this big fellow, the size of a swan, stalking solemnly about, looking carefully after thirty or forty little yellow balls running after him. He was as faithful as any old hen.²³¹

Amid all these bewildering cries, it is almost a relief to know that one bird is absolutely voiceless, — the common European stork.²³²

Nothing in bird-life is more astonishing than that these interesting neighbors of ours can eat with impunity things that would kill a man. Crows readily devour the berries of poison ivy and the still more poisonous swamp dogwood, or poison sumac, says Mr. Henshaw in a newspaper article. A writer in *Nature* says that song thrushes and other birds eat ripe mezereon berries greedily, and Dr. Withering states in “British Plants” that six

berries of this shrub (*Daphne Mezereum*) will kill a wolf.

It is curious and interesting to note the various ways in which the different species of birds have solved the ever-pressing question of food-supply. There are about as many ways of food-getting in the world of birds as in the world of men, and when we come down to foundation facts, we are forced to admit that the principal business of birds and men is to minister to the demands of that exacting and never satisfied organ, the stomach. This work among birds, as among men, brings out the intelligence and sharpens the wits, developing the utmost that is in them.

One way of securing supplies, among birds at least, is by robbery. This is a favorite method with some of the larger and more powerful species, those warriors on wings. The American eagle is well known to rob the osprey of fish he has brought up out of the sea. The jaeger, says Mrs. Eckstorm, is "the gull's robber cousin," "the pirate of the sea," and is said never to get a mouthful that has not first been swallowed by another bird. It is his custom to chase a tern till the fish it has

swallowed is thrown up and dropped, when he often catches it before it touches the water.²³³

These feathered robbers, as I have said, are usually the large sea-birds, but the practice of stealing the result of others' work is not confined to them, I regret to say. The English sparrow has of late become quite expert in the practice. I have seen a party of them learning the trick with a trio of young cardinal grosbeaks who were being fed by their parents on some shelled corn I had put out for them. The sparrows had discovered that corn was good by following the old birds about and snatching the bits which dropped from their beaks as they manipulated the rather awkward material. Finding this agreeable to the taste, the sparrows turned their attention to the youngsters, who were, of course, more easy victims. The parents would remove with some labor the shell of a kernel, and then feed it to the young and turn away. The foreigner watched the proceedings with interest, and the moment the elder cardinal had gone, snatched the morsel from the young bird's mouth. This they did so often that they became quite expert at it.

Later they turned their attention upon the robin, whose food of earthworms seemed even more attractive to them. I have many times seen a robber sparrow follow a robin about on the lawn, and when he drew a promising-looking earthworm from the sod, spring forward, snatch it, and fly away. The robin, unused to this highway robbery, usually looked dazed, as if he did not know what had happened; but he is a bird of intelligence, and I have faith to believe he will in time learn to protect himself and punish the thief.

One of the ducks has learned a convenient trick for getting his dinner. Some of the diving brotherhood who feed under water stir up a great deal that floats, and the shoveler, preferring to take his provision from the surface, follows his diving neighbor to the feeding-place, and while the feeders below stir up the inhabitants, he swims around on the surface and catches whatever floats.²³⁴

For the oddest selection of food to fill the stomach the ostrich bears the palm. It is said that there is nothing small enough to be swallowed that he will not send down that long throat, from small and sometimes living ani-

mals to all vegetables and fruits, stones of a pound weight, tiles, rags, glass and crockery, knives, bunches of keys, nails, and balls. In one who died in captivity, nine pounds of such stuff were found.²³⁵

It is interesting, according to Captain Ingraham, to see a flock of flamingoes feed, especially where the ground is a little hard, so that they are obliged to dig. They feed in the edge of water, which prevents their scratching like fowls, but they go through the same motions, only more slowly than fowls, "and as their long legs go up and down it reminds one of a regiment of soldiers marking time." When the food is dislodged they put their bills down, head upside down, like standing on the head.²³⁶

The curious habit of the shrike of impaling his dead prey on thorns has created a great deal of talk, and the bird is universally under the ban for that reason, though why sticking a dead beetle or field mouse, or even another bird, on a thorn is worse than eating it at once I fail to see. It seems to be a distinction without a difference.

Moreover, the habit has been much exag-

gerated by sensational writers, each of whom wishes to say something a little more extraordinary than the preceding writer, from whom in most cases he gets his "facts." Conscientious bird-students who have tried to verify the statements of these writers have found no such state of things as described. Mr. Rowland E. Robinson of Ferrisburg, Vermont, writes that he watched for twenty years to see some of the wonderful things told about this bird, and in all that time saw only three cases of impalement, — one a field mouse, and two English sparrows on the spikes of a hawthorn bush.²³⁷

To this testimony I will add my own. Whenever I have been able to study a shrike, I have done so with the greatest interest; especially have I always sought to find the larder he is reported to keep so well supplied. I have seen the birds in the West weeks at a time diligently hunting the larger insects in the grass, and in the East I have seen them foraging among growing plants in a garden and catching field mice in a meadow, and in all my exhaustive searching I *never*, so far as I can now recall, *found one thing impaled*.

A favorite morsel for the English shrike is a hideous beetle called "the devil's-coach-horse." For this creature the shrike hunts, and for killing the repulsive object the shrike is highly respected by the rustics.²³⁸

Moreover, the shrike does not torture his prey. Mrs. Eckstorm says that he kills his victims "speedily by pecks on the head, or by throttling them; he does not hang them up alive; and though he kills more than he needs, he does not seem to do it wantonly, but tidily hangs up the carcass where he can find it some day when he needs food."²³⁹

A book might easily be filled with facts bearing on the universal habit of eating, but I will speak of but one more strange custom connected with feeding the young.

The method of some of our birds, notably the hummingbird and the flicker, of thrusting the long beak down the throat of the nestling, till the observer looks on with horror, is well known; but a late writer, a student of birds, describes a still more extraordinary way of administering the staff of life to a tender youngling. Says this writer: "[The mother pelican] waddled about till one of the young-

sters began a series of actions that were very interesting. He fell on the ground before the old bird, grunting and flapping his wings as if he were in the last stages of starvation. Still the mother did not heed his entreaties, and the youngster suddenly got well and began pecking at her bill again. The old bird backed up as if she were getting a good footing, and slowly opened her mouth to admit the bill of the little pelican. . . . Jonah-like, down the mother's throat went the head and neck of the child till he seemed about to be swallowed had it not been for his fluttering wings. He remained buried in the depths for about two minutes. . . . Nor did he withdraw voluntarily, but when the supply was exhausted or the mother thought he had enough, she began slowly to rise and struggle to regain her upright position. The youngster was loath to come out, and, flapping his wings, he tried in every way to hold on as she began shaking back and forth. The mother shook around over ten or twelve feet of ground, till she literally swung the young bird off his feet and sent him sprawling." ²⁴⁰

XII

HIS EQUIPMENT

The habit of observation needs cultivating. . . . Especially in a naturalist is power of observation wanted. The older writers put down much that has little foundation, . . . and some of these old stories are still repeated and believed, while the real wonders of Nature . . . often remain unnoticed. — F. W. HEADLEY, *Structure and Life of Birds*.

Every fact in Natural History, if carefully observed and correctly interpreted, is interesting even if not important; and when the fact in any way illustrates the natural attributes of what man, the proud lord of creation, is wont to designate a lower animal, it is even not unworthy the attention of the philosopher. — DR. GEORGE HARLEY.

XII

HIS EQUIPMENT

WHEN we begin to consider the construction and the powers of the feathered creation, even although we do not attempt a study, it is hard to decide of what to speak first, so many of the birds' powers transcend ours, so remarkably are they fitted for their extraordinary life in the air and no less in the water, elements of which our own control is so limited.

We shall not here attempt a study, nor even an exhaustive synopsis of the studies of others, but simply call attention to a few of the more obvious powers of our marvelous neighbors that any one may observe, in the hope of arousing interest and stimulating more serious study of the subject.

Consider for a moment the eye of the bird. This is a telescope and microscope in one, which adjusts itself automatically and almost instantaneously. A bird soaring high in the air, at a distance where the human eye could distinguish only the largest objects, is able to

see the movements of a mouse on the ground, and no one can doubt his sharpness of vision as he darts upon his prey.

"A gannet, flying one hundred feet or more above the sea," says Mr. Headley, "will distinguish a fish near the surface from the water which it so nearly resembles, and pounce upon it." He says, too, that gulls that follow a steamer will pounce unerringly upon small bits of biscuit wholly invisible to a human eye in the foam which follows the ship.²⁴¹

"The barred owls," says Bolles, "exhibit the most marvelous powers of sight, and their eyes may well be called telescopic. In dozens of instances Puffy has seen, and by his fixed watching of the sky has called my attention to hawks flying at so great a height that they were well-nigh beyond man's vision. More than this, he has on two or three occasions seen a hawk approaching in the upper air when my eyes, aided by a fairly strong glass, failed to see the bird until it drew nearer and grew large enough for me to detect it as a mere dot in the field of the lens."²⁴²

"The power of sight exhibited by the red-headed woodpecker," says Maurice Thomp-

son, "is quite amazing. I have seen the bird, in the early twilight of a summer evening, start from the highest spire of a very tall tree and fly a hundred yards straight to an insect near the ground."²⁴³

An interesting story is told by Gätke of a flock of birds which, when passing over his island, suddenly dropped down upon certain plants growing there, and fell to picking industriously among the leaves. Knowing that leaves were not their usual diet, he made an examination and found many of the leaves slightly curled, and under each curl was a small caterpillar which the birds were eating. They must have seen and recognized the minute disfigurement of the leaves as they were flying over.²⁴⁴

All students of the living bird know how closely birds watch their eyes. A person approaching a bird looking a little to one side of him is able to get much nearer than if he looked directly at him. One will often retain his position while the student passes very near, if he steadily looks past him, but the instant he turns his eyes upon him the bird is flown. Many times, too, the observer will

see birds carrying on their ordinary business of building or feeding, of love-making or singing, with perfect indifference to the neighborhood of people engaged in their own affairs, talking or working or moving about, even sometimes coming within a few feet of them, so long as the people are absorbed in their own concerns. But let one turn for a moment his eye upon his feathered neighbors, and instantly, as if by magic, the drama ends and the actors are gone. How close must have been the observation of the birds, under their apparent indifference, to detect the first sign of attention to their movements!

No less remarkable than the sight is the hearing of birds. It is supposed that woodpeckers' locate their prey under the bark and even in the wood of a tree trunk by hearing it move, and that birds who probe the mud or soft earth have the same power. We have all seen the robin on the lawn apparently find his worm by listening intently for its movements; and Bendire says that while a red-breasted sapsucker was digging away inside the trunk of a tree she would hear him ap-

proach, however silently, to his own hearing, he crept up towards the tree. Before he got within thirty yards of it she would stop working and thrust her head out to watch. If he kept motionless, she would soon go back to her work, but the least movement brought her out again.²⁴⁵

Many instances of this extraordinary faculty could be given, especially among the owls, who, indeed, it is said, are endowed with the further ability of closing the ears against unwelcome sounds, a faculty we dwellers in cities would be glad to share.

Again, what is more wonderful in its construction and varied uses than the beak—the bird's hand—horny and stiff and constantly renewed like our finger-nails, and yet, at least in many cases, sensitive to the touch. With the beak the bird selects and manipulates his food, shelling his seed or cutting and preparing his meat; with it alone he also does the heavier work that is demanded of him, digging a home in the earth or chiseling it out of wood, weaving it of grass stems or fibres, moulding it of mud, building it of sticks, or sewing it to a leaf. With this most

versatile tool he performs his careful toilet, dressing and arranging his beautiful plumage and turning it into an offensive weapon against an enemy at a moment's notice, — a pick, a dagger, a brush and comb, a needle, a hand, a tooth, and a hammer, all in one.

The wing of the bird is the most wonderful instrument on record, and man has been trying to imitate it these hundreds of years. The bird's power of soaring about in the air, without movement of wing or feather that can be discovered by man, even aided by the all-disclosing camera, is marvelous beyond words. Mr. Palmer, in his work on the Pribilof Islands, tells of a study he made of the soaring of gulls. He disturbed some who were taking their noonday siesta, and, sitting down on the edge of a cliff, watched them sailing around in great circles, coming very near him on every round and watching him closely. A bird would move round these circles without stirring a feather, so far as he could discover, although there was no wind that he could feel. The length of their flight was fully fifty yards, and one would pass back and forth several times without the flap of a wing. One bird

that he timed made the circuit seven times without moving his wings.²⁴⁶

Mr. Selous speaks of the wonderful flight of the fulmar petrel. "In [his flight] there is conveyed to one a sense, not so much of power over as of actual partnership in the element in which the bird floats, as though it had been born there, as though it might sleep and awake there, as though it had never been, nor ever could be, anywhere else. . . . The thin, cleaver-like wings are . . . spread to their full extent, and on them the bird floats, sweeps, circles, now sinking towards the sea, now cresting the summit of the cliff, . . . wonderful down-sliding, up-gliding circles that have more of magic in them, and are more drawn to charm, than had ever a necromancer's." ²⁴⁷

Mr. Hudson tells of the soaring of the chakar of South America, who seems to soar because he enjoys it, as indeed is the case with all birds. The chakar rises from the earth with difficulty, but his efforts grow less as he goes up, till, when he can hardly be seen, he floats with ease, singing with evident delight. He spends a great part of pleasant days in this way.²⁴⁸

Nor is this all, nor even the most extraordinary. There is the well-known habit, common in the larger birds, of remaining motionless in one spot with wings wide-spread, looking as if glued to the sky. Many observers must have seen some of our large hawks in this position, apparently painted on the blue, almost transparent against the sky,—an exquisite picture. This is something the wise men have not been able to solve, hardly even to form a theory upon, while that sharp little detective, the camera itself, fails to penetrate the secret.

Nothing in the equipment of our little brothers is more wonderful than their lung power, and the heights which they reach, not only breathing, but exercising violently. It is said that men, when perfectly still, can hardly support life at a height of 26,000 feet, while birds live and fly vigorously at 30,000 or 40,000 feet.²⁴⁹ Humboldt asserts that the condor flies higher than Chimborazo, 21,420 feet, and Mr. Orton describes seeing numbers of them hovering at least a thousand feet above the summit of Pichincha, which is nearly 16,000 feet high, and says

that Dr. Hooker found crows and ravens on the Himalayas, 16,500 feet high, and that flocks of geese are said to fly over the peak of Kintschinghow, 22,756 feet high.²⁵⁰

The speed at which birds are known to fly is another extraordinary thing. The above facts, fully proved, show that they are possessed of an astonishing breathing apparatus, but statements of their speed quite too marvelous for belief have been made by apparently reputable authorities, though more and fuller verification is necessary.

In one respect the bird's breathing arrangement rivals that of the Oriental wonder-worker who, it is said, can breathe through his ears. Birds have been known, when the windpipe was unavailable for the purpose, to breathe through the open end of a broken bone.²⁵¹

The plumage of birds is the most wonderful dress Nature bestows upon any of her creatures, so light, so warm, so adapted to all their movements and their needs, so marvelously varied, and withal so beautiful.

To the careless thought a feather seems a simple thing, but in fact there is almost an infinite variety of feathers, even many sorts

on one bird. Feathers suitable to beat the air and carry their possessor far away in a moment, differ in almost every way from the soft downy ones that cover his body like a suit of underclothing and protect him from cold and wet, and still more perhaps from the outside dress, the show feathers one might call them. Some of them are filmy plumes, light and airy as a breath, others short and stiff and business-like for service; these long and soft and fluffy for ornament, those hairy or bristly; most singular of all, the "powder down" feathers, which grow in greasy patches on the heron and constantly break off in powder-like bits.

Nothing, as Mr. Arthur Nicols remarks, can exceed the compactness, lightness, and strength of plumage clothing. It is a perfect non-conductor, retaining the heat of the body and so enabling its possessor to endure life at the poles, and equally protecting him from the rays of the tropical sun and so fitting him for life in the hottest parts of the earth. This is why birds can endure great extremes of temperature.²⁵²

Even in the great variety of feather dress

and decoration which we meet with everywhere in the bird world, there are some arrangements so very peculiar that they might almost be called freaks : as, for instance, that of the great condor of serious business habits, who wears fluffy white frills around the neck, appearing very droll on him, and suitable, one would think, only to a more frivolous and purely ornamental branch of the bird family.

So much has been written about the plumage shows of foreign birds that we overlook the fact — even if we happen to be familiar with it — that we of the Western Hemisphere have at least one family which can compete with the world for wonder and variety of feather decoration. These are the hummingbirds, with their fantastic frills and fans, their crests, gorgets, and eccentric feathers of many kinds, exceeding in variety the birds-of-paradise themselves, and in colors that rival gems. They have not the big showiness of the peacock or the argus pheasant, but are far more attractive and bewildering in their exquisite proportions and dainty ornaments. In the plumage of hummingbirds,

says Hudson, "Nature has strained at every variety of effect and revelled in an infinitude of modifications." "How wonderful their garb is," the same writer goes on, "with colours so varied, so intense, yet seemingly so evanescent! — the glittering mantle of powdered gold; the emerald green that changes to velvet black; ruby reds and luminous scarlets; dull bronze that brightens and burns like polished brass, and pale neutral tints that kindle to rose and lilac-coloured flame. And to the glory of prismatic colouring are added feather decorations, such as the racket plumes and downy muffs of *Spathura*, the crest and frills of *Lophornis*, the sapphire gorget burning on the snow-white breast of *Oreotrochilus*, the fiery tail of *Cometes*, and, amongst grotesque forms, the long pointed crest feathers, representing horns, and flowing white beard adorning the piebald goat-like face of *Oxy-pogon*." ²⁵³

Then there are the birds who "must suffer to be beautiful," in whom even comfort seems to be sacrificed to show, such as the peacock, who must forever drag an unwieldy tail about with him; the well-known argus pheasant,

who can spread an amazing show of gorgeous plumage, but who finds flying difficult, sometimes almost impossible; and the lyre-bird, embarrassed in movements by his fantastically beautiful tail; and most of all, the birds-of-paradise.

These celebrated birds — might one call them the “professional beauties”? — are not only hampered in their ordinary movements, but their adornments really imperil their lives in a strong wind, and especially in a heavy rain. When a bird-of-paradise gets wet it is said that he sometimes becomes perfectly helpless, the plumes of wing and tail get entangled, and the bird falls to the ground, sometimes into the water, where he drowns.

It is, however, interesting to see the bird's appreciation and delight in his own beauty. Nothing could be more “human” than the dainty care one of these highly decorated birds-of-paradise will take to preserve the perfection of his attire. In a cage where he has been observed he will not go to the floor for the most desired dainty. He bathes twice daily and dresses his plumage with untiring pains.

Birds with less pretentious decorations often

show careful concern for the attractions they possess. The magpie of the West is plainly proud of his fine long tail, keeps it in beautiful order, and holds it up from the ground most carefully. The same is true of the mockingbird, common in our Southern and far Western states. Some birds with brilliant white breasts are ludicrously particular to preserve their immaculate whiteness, not only preening and carefully removing every speck, but leaning over and contemplating them with apparent satisfaction. I once had a bird who evidently fretted himself to death because a white feather persisted in intruding itself into his fine tail while moulting. He worked and tugged at the offensive feather till he was worn out and at last died.

A number of birds confine their peculiarities to one or two feathers. A famous trogon of Central America, a gorgeous creature in golden green and rose-color, sports two or three very long, exquisite tail-feathers which frequently cost him his life. And a certain night-jar of Africa, related to our whip-poor-will, has a wing-feather on each side developed into a sort of flagstaff, being a bare shaft with

a feather tip at the end.²⁵⁴ When he lies in the long, plummy grass and elevates his two flags, which is his habit, he is well concealed.

A curious plumage eccentricity is a shaggy head. One bird in Java, rejoicing in the name of "plumed frog," emulates a Skye terrier, having long ragged feathers on the head and hanging down over the eyes; and another of the same family has a large tuft of feathers projecting horizontally from his face, a grotesque decoration.²⁵⁵

The head is a favorite place for startling effects. Besides the innumerable, and usually beautiful, crests, most of which are erected or depressed at will and are as good "indication of the mind" as the old Latin reader declares the lion's tail to be, — besides these, from the dainty ornament of the peacock to the heavy umbrella-shaped one of the umbrella bird, there are some curly-headed birds. One of the birds-of-paradise has a full set of curls, and a bird of another family, of South America, has a crest of curls that look as if treated with curling-irons.²⁵⁶

Ground-dwelling birds seem to be particularly subject to eccentricities of plumage as

well as of habit, and more especially of skin decoration, — horns, wattles, expansible air-sacs, etc. Also they are the most fantastic in their courtship antics, and make the greatest variety of sounds of any one class of birds.

Besides these ornamentations which may be classified, there are a thousand oddities which are peculiar to one species alone: the red wax tips to some of the feathers of our cedar wax-wing, which are said to appear only on the adult, but which I have found about the size of a thread on a nestling whom I held in my hand. Then there is the fine drooping or “vaulting” tail of our cock of the poultry-yard; the changeable dress of the starling, which varies from violet when flying to a bright copper-color when at rest in the sun; and that of some of our blackbirds, who are blue or green or bronze or velvety black according as the light strikes them.

This branch of our subject — the wonderful equipment of the feathered world — is barely touched upon here; a volume might be filled with it.

A mysterious gift, little understood by man, but possessed by birds and also by some mam-

mals — notably the dog and cat — is that called the “homing instinct,” the faculty that enables its possessor to find its way home from almost any distance and under almost any circumstances. This power is well known in the case of carrier pigeons, and of late, it is said, experiments have proved that it is shared by swallows; and Professor Shaler of the Lawrence Scientific School at Harvard says that the common fowls have a topographic sense, and are never lost.²⁵⁷

The most stupendous mystery in bird-life, the study of which has occupied the attention of ornithologists for ages and which is still unsolved, is migration. Says Newton: “[Migration is] perhaps the greatest mystery which the whole animal kingdom presents . . . and can in its chief point be no more explained by the modern man of science than by the simple-minded savage or the poet or prophet of antiquity. Some facts are almost universally known and have been the theme of comment in all ages and in all lands. . . . The flow and ebb of the feathered tide has been sung by poets and discussed by philosophers, has given rise to proverbs and entered into popular supersti-

tions, and yet we must say of it still that our 'ignorance is immense.' " ²⁵⁸

Some of the points of interest in migration, besides the bare fact that so many birds change their residence twice a year, are these: First, the immense distances they are known to travel, in many cases, it is supposed, without resting; some birds nesting in the Arctic regions going the whole length of South America to Patagonia for the winter, and passing over climates apparently quite as suitable for wintering.²⁵⁹ Second, the wonderful, almost unbelievable, height at which they fly, and often at night, when at other times they sleep, and seem to be dazed if awakened. And third, the astonishing speed they are supposed to attain in their flight. Almost everything regarding this mysterious subject is still to be discovered, for the birds in their habitual migration have set us several problems as yet but partially solved.

These points and others which do not come within the scope of this work, present subjects of the greatest interest to future students of bird-life.

What becomes of the bodies of birds after

death has long been a question. Their bodies are seldom found, and it is thought that this fact is not adequately accounted for by the myriads of creatures which eat and otherwise dispose of such things. Mr. Maurice Thompson has advanced a curious and original theory in his book "My Winter Garden." He says: "I have studied wild birds with persistence . . . in all seasons and under all conditions, between Canada and the Gulf of Mexico; but I never yet knew of one that died of old age, never killed one that, when dissected, appeared in the least affected with senile decay. I do not say that birds never die of old age, — domesticated birds certainly do. . . . I do roundly deny the existence of any evidence, worth serious attention, tending to prove that wild birds, in their natural habitat, with plenty of their natural food to eat, ever die, save when stricken by disease or accident." To this question of "bird immortality," Mr. Thompson says he is "bound sometime to return with plenty of facts to uphold my theory."²⁶⁰ It is greatly to be regretted that he did not live to redeem his promise.

XIII

HIS USEFULNESS TO US

The ravages of birds are grossly exaggerated. — W. WARDE FOWLER, *A Year with the Birds*.

We can feed our cattle, our hogs, a vagabond homeless cat, a stray dog, or a tramp; but if a bird claims any of our bounty, capital punishment is not too severe for it. — EDWARD HOWE FORBUSH, *Useful Birds and their Protection*.

While we regard birds as enemies they naturally retaliate, but how glad they would be, aye, even the fiercest beasts, to become friendly with man! There is none among them untamable, positively not one. — SIR EDWIN ARNOLD, in the *Youth's Companion*.

The war of extermination waged on game birds is a blot on the history of American civilization. It is paralleled only by the destruction of birds for millinery purposes, which has some shockingly cruel aspects. — EDWARD HOWE FORBUSH, *Useful Birds and their Protection*.

XIII

HIS USEFULNESS TO US

THE subject of the usefulness of the bird family to the human family, nay, of the absolute necessity of its services to our life on the earth, is too large for adequate treatment in this book.

Surely, at this late day, with the hourly experience of any one attempting to cultivate so much as a rosebush — yes, more, of any one desiring to enjoy the fruits of the earth — and knowing as we do from long experience that the bird is the only efficient check upon insects, — surely, I say, nothing need be said of their ravages and their inconceivable multiplication. Yet a few facts from the recently published admirable work of Mr. Forbush on “Useful Birds” may give one subject for thought.

He says, “When we fully appreciate the consuming power of insects, they assume an economic importance greater than can be accorded to the ravening beast of prey.” ²⁶¹

“The number of insect species,” he goes on, “is greater by far than that of the species of all other living creatures combined. More than three hundred thousand have been described. There are many thousands of undescribed species in museums. Dr. Lintner, the late distinguished State entomologist of New York, considered it not improbable that there were a million species of insects.”²⁶² Dr. Fitch, by careful investigation of the aphides on a cherry tree ten feet high, found that by moderate estimate there were twelve million plant-lice on that tree.²⁶³

“The rapidity of propagation shown by some insects is perhaps without a parallel in the animal world.”²⁶⁴ The Canadian *Entomologist* states that all the transformations of the Colorado potato beetle “are effected in fifty days; so that the result of a single pair, if allowed to increase without molestation, would in one season amount to over sixty millions.”²⁶⁵

And as to the voracity of insects, “a certain flesh-eating larva will consume in twenty-four hours two hundred times its original weight,” as if in human life an infant in the

first day of its life should consume fifteen hundred pounds of food.²⁶⁶

A word as to the financial losses from insect ravages: "In 1854 the loss in New York state alone from the ravages of the insignificant wheat midge (*Diplosis tritici*), as estimated by the Secretary of the New York State Agricultural Society, was fifteen million dollars."²⁶⁷

Dr. C. L. Marlatt states that "in the year 1900 the losses in the wheat-growing states from [the Hessian fly] undoubtedly approached one hundred million dollars."²⁶⁸

Professor C. V. Riley in 1890 stated that he had estimated some time previous to that date, "that the injury done to crops in the United States by insects exceeded three hundred million dollars annually."²⁶⁹

These are but a very small part of the evidence produced by Mr. Forbush on this important subject. As for the fitness of the bird for keeping down these destructive armies, the one prominent fact in the equipment of the bird for his work is the enormous amount of food he can dispose of in a day. No other creature known, unless it be the insects he

feeds on, requires such a prodigious amount of sustenance. For statements and statistics I refer my readers to that most instructive and valuable work from which I have taken the foregoing extracts.

In the face of these absolutely appalling figures, does it not seem a crime to allow the slaughter of our most useful helpers, which is constantly going on in our own country, from the boy with his sling or bow and arrows to the plume-hunter and the pot-hunter?

The canny little country Switzerland is wiser. According to Mr. Fowler, "no bird may now be killed at any time of the year, in any part of Switzerland, without either a game license, of which the cost is considerable, or permission to procure specimens for a scientific object."²⁷⁰

Almost as bad in its results as to kill birds outright is to slander them. Several birds, simply because of a bad name fastened upon them, are considered fair game for persecution. There is the catbird, beautiful, useful to us, and a charming singer; because his call-note at a little distance resembles the mew of the cat, he has not only been named after his

worst enemy, but invested in the popular mind with the vices the same unthinking notion has bestowed upon the poor cat. "I hate a catbird!" one often hears; yet if the speaker is forced to give reasons, they will almost invariably be found nothing more important than that he "mews."

Of the catbird, Nehrling says: "From early morning to sunset it watches over the fruit-trees, and kills the insects that would destroy them or their fruit. True it takes its share, especially of cherries, but for every one it takes it eats thousands of insects. Where there are no small birds there will be little fruit."²⁷¹

One of the most persistently slandered birds is the blue jay. Listen to the words of observers who do not speak from hearsay but from positive first-hand knowledge. "That swaggering fellow the blue jay," says Praeger, "seems desirous of making a bad impression, but the fact is he is a great blusterer; it is only on rare occasions that he robs other birds' nests, and the amount of fruit he consumes is trifling. His favorite food is acorns, beechnuts, and chestnuts, varied with some

waste corn and wheat. Grasshoppers, caterpillars, and beetles form one fourth of his food. A pair of jays is certainly an acquisition to any orchard.”²⁷²

Says Professor Lane: “If we could learn the secret of a single winter’s work done by a blue jay, of every grub and chrysalis torn from its hiding-place, of every hurtful seed destroyed, . . . we should not begrudge the busy worker the grain or the corn stolen from grainery or bin.”

Dr. Brewer says that a pair of jays feed their young five hundred thousand caterpillars in a season, also that one pair will destroy a million insect eggs each winter.²⁷³

And, lastly, let me refer to the testimony of the Department of Agriculture, from the examination of the contents of nearly three hundred stomachs: “The accusations of eating eggs and young birds are certainly not sustained. . . . In fact, the examination of nearly three hundred stomachs shows that the blue jay certainly does far more good than harm.”²⁷⁴

Our beautiful Baltimore oriole has been accused of various ill deeds,—eating honey-

bees, from which he has been completely exonerated, and lately of pecking grapes. But one farmer who suffered from his fondness for this fruit says that, in spite of that propensity, he is worth his weight in gold as an insect-destroyer. This bird is well known to eat great quantities of wireworms and hairy caterpillars, that few birds will touch, and he has been amply proved to be of great value to us.

The dainty cedar waxwing is sometimes called cherry-bird, so named, it is supposed, because of his fondness for that fruit. It is admitted that the bird has the good taste to prefer a fruit diet, but, fortunately for us who share this liking of his, he chooses the wild fruits when he can get them. Also he devours immense numbers of canker-worms. In one case where an orchard was infested by these pests, a small flock of cedar-birds came to the rescue. A few were shot to make sure of what they were eating, and in the stomach were found in most cases about one hundred of the worms. At that rate, at a very moderate calculation, that one little flock was destroying many thousand worms every day.²⁷⁵

“Woodpeckers come in for plenty of abuse,” says Mr. Praeger. “They are accused of injuring the bark of trees, stealing fruit, pecking apples. . . . They do all peck wood, as their name implies, but with five of our species this is only to get at the injurious insect within, and they are thus conservers of forests and orchards. One species, however, the yellow-bellied woodpecker, or sapsucker, does eat largely of the soft inner layer of bark, the cambium layer, and girdles trees to obtain the sap. Where the bird is abundant it can do real injury. . . . Besides cambium and sap, it preys largely on insects, and seems never to touch domestic fruit.”²⁷⁶ The other woodpeckers are almost uniformly beneficial. Their field of labor is the trees, and the service that birds perform in protecting woodland trees is more nearly indispensable to man than any other benefit they confer on him.

Moreover the injury done by the sapsucker is greatly exaggerated, and indeed disputed by some observers. Otto Widmann, a trustworthy ornithologist, says that certain trees not only girdled but in some places completely

covered with holes thrive as if not hurt in the least by these perforations and the loss of sap.²⁷⁷ I have myself seen maple trees with trunks for three or four feet completely covered with the perforations of the sapsucker, always, of course, a little distance apart, flourishing equally with others beside them which had not been touched; also a shrub, I believe mountain-ash, with the stems almost completely girdled near the roots, still in perfect condition.

The motive of the bird in making these perforations is also seriously questioned. Many who have seen them at work and watched closely, testify that the exuding sap attracts many insects, on which the bird is seen to feed. It is a significant fact that when Mr. Bolles, wishing to prove that the sapsucker lives upon sap, fed some captive sapsuckers on that sort of food, they all died, thus proving to the unscientific mind that they could *not* live upon it.

The cuckoo, called also rain-crow and Indian hen, is, in spite of some superstition connected with him, and in spite of the misrepresentations of sensational writers, one of the most

useful birds to us. One reason for the mystery attaching to this bird is his silent way of getting about and his habit of keeping himself concealed. He does not fly about much when foraging, but simply passes from tree to tree, keeping well in towards the trunk and slipping from branch to branch, more like a beast than a bird. But he devours immense numbers of hairy caterpillars, which are repulsive to most birds. In the Agricultural Department at Washington may be seen the stomach of a cuckoo so thickly set with the hairs of caterpillars it had eaten that it looks like a piece of fine fur. In analyzing the contents of the stomachs, some cuckoos were found who had eaten more than one hundred tent-caterpillars, and one with two hundred and seventeen fall web-worms, — by actual count, — of course only one meal of each bird.²⁷⁸

Each species of bird has his own place to fill, his part to perform in keeping down the armies of insects. One species clears the tree trunks, while his neighbor works under the bark ; another goes over the larger branches, and still another attends to the twigs and leaves ; and some species put all their work

upon shrubs. Many confine themselves to the surface of the earth, and among these too there is a division of labor. Robins take care of the lawn, thrushes do the same kind of work in the woods, towhees search under bushes and weeds, meadowlarks keep the meadows clean, and the various species of native sparrows are everywhere at work on the ground. Swallows and flycatchers watch the air, and shore-birds keep our beaches clean. Hawks and owls relieve each other, day and night, in destruction of mice and moles and other small enemies, while buzzards and their kind perform valuable scavenger duty.

The list is endless, for, as I have said, each species has its own well-defined sphere of operations, and no one, that I have heard of, was ever known to shirk, to strike, or in any way to neglect its duty.

The kingbird is a little brother laboring under a load of slander. He is accused of eating bees, and hundreds of kingbirds have been shot to prove or disprove this charge. In all cases so far as I have been able to discover, the bees eaten have been found to be almost exclusively the drones. Not that the bird is

supposed to select in the interest of the bee-keeper, but for the very good reasons that the drones fly higher than the honey-bees and are therefore more accessible to flycatchers, also that drones have no sting and are distinguished by a white face and so are easily recognizable to the sharp eyes of the birds.²⁷⁹

Walter E. Bryant, a well-known writer, tells of an extensive bee-keeper in California, who, finding numbers of kingbirds darting about among his bees, killed and dissected more than one hundred and found them gorged with bees, but in no case was there one honey-bee; all were drones. This bird was, no doubt, the Arkansas kingbird, the California species, with habits, however, about the same as the Eastern species.

In other cases kingbirds have been found who had eaten robber-flies, a pest known to have killed one hundred and forty honey-bees in a day. In addition the kingbird is an industrious hunter of insects known to be injurious. Among them are the gadfly, the clover-leaf weevil, the destructive rose-chaffer, ants, and grasshoppers.²⁸⁰

The common robin is another bird under

the ban because of his fondness for fruit, but as a result of the examination of many stomachs, this is the decision: when the snow is off the ground, the robin comes to the lawn, subsisting chiefly on fly larvæ; one hundred and seventy-five have been found in one stomach. As the season advances they eat larvæ of many kinds, beetles, grasshoppers, and other ground insects. During March (these statistics, it should be stated, were compiled for Illinois) much of their food is cutworms; in April, beetles; but up to the end of May, ninety-five per cent of their food is insects. In June, July, and August they eat more fruit, but much of this is wild. Forty-one different kinds of wild berries have been found in the stomachs. On the whole, Professor Forbes, summing up the evidence, says, "I, for my part, do not believe that the horticulturist can sell his small fruits anywhere in the ordinary markets of the world at so high a price as to the robin, provided he uses proper diligence that the little huckster does not overreach him in the bargain."²⁸¹

The shrike, branded with the name butcher-bird, given him at first because he hangs his

food as does a butcher his wares, but of late used as a term of vilification, suffers also under a load of prejudice, added to by many latter-day writers, who care far more for sensational statements than for the truth (as already noted). Besides the observations of unprejudiced and careful students, the testimony of the official investigations of the Agricultural Department, so often mentioned, is conclusive. It is thus summed up by the late Sylvester D. Judd: "The present investigation shows that beneficial birds form less than one fourth of the food of the butcher-bird. It also shows that the butcher-bird, in addition to being an enemy of mice, is a potent check on the English sparrow and on several insect pests. One fourth of its food is mice; another fourth grasshoppers; a third fourth consists of native sparrows and predaceous beetles and spiders; while the remainder is made up of English sparrows and species of insects, most of which are noxious." ²⁸²

The celebrated Scotch naturalist Thomas Edward once found the mouth of a swift that had been shot full of gnats and flies she was taking to her nest. Many of them were alive,

but they seemed to be held together by some glutinous fluid, probably the saliva. He took the mass home and examined it. There were fully one hundred gnats and flies in that one mouthful. From this and observations of the frequency with which the old birds feed the young, he made careful calculations and came to the conclusion that, during the rearing of their usual two broods, one pair of swifts, in one season, would destroy the enormous number of nearly three hundred thousand of these pests of the air. This makes it nothing less than a crime to kill a swift.²⁸³

The testimony in favor of that much maligned bird, the common crow, is so abundant that it cannot be repeated here. I will therefore give an unimpeachable verdict. An exhaustive study of the food habits of the common crow by the examination of over nine hundred stomachs is summed up in an official report of the Department of Agriculture at Washington, in these words, "The facts on the whole overwhelmingly speak in favor of the crow."²⁸⁴

I have offered but few of the immense number of statistics showing the value to us

of the bird race. If a fuller appreciation of their services could bring about better relations, a surer protection, the benefit to us would be incalculable. If we could retain alive the millions that are sacrificed by nest-robbers, collectors, and gunners of all sorts we should reap a substantial reward at once. No more would our grain fields be destroyed nor our fruit devastated in the bud ; no more would our oak trees be disfigured with broken and dead branches in the midst of the green, nor our orchards be unsightly with the nests of caterpillars ; no more would our city streets be foul with the crushed bodies of worms, nor our vegetables be black-hearted with the work of another pest.

Greater than this in importance is the benefit which would result to our boys by a training in humanity. No one in this enlightened day can doubt that such training is greatly to be desired, by just so much, indeed, as a noble manhood is more to be desired than a state of brutal savagery. No one quality takes a youth so far on his way upward to the perfect manhood as humanity to those weaker or lower than himself. The boy

trained to be gentle to animals, to be reverent of all life, will never descend below the level of the brute, as many human beings do at present; no wife-beaters, no murderers will come from the ranks of the humanely taught boy. And this is not a mere opinion of mine. It is a fact obtained by a careful examination into the early training of criminals in many prisons.

I will close the subject with the words of an ornithologist whom I have quoted several times in this chapter, William E. Praeger of Illinois : —

“I would be doing a great injustice to my subject were I to limit the beneficial influence of the birds to the field and garden. No common drudges are they, sullenly working for a daily wage, but they come brightly clad and with joyous voices to their appointed task. With man alone they share that wonderful power of song, their speed and grace of movement fill us with admiring envy, the exquisite colors and texture of their plumage are unequaled among created beings; they appeal to our best æsthetic sense. And in their lives we see beings gifted with a high

order of intelligence, teaching us love, courage, constancy, maternal care, devotion to duty. There is not one of us but may learn a lesson from the birds. So when winter comes, and the crops are gathered in, and the little workers wing their way toward their southern homes, let us bid them farewell, not only as good and faithful servants worthy of their hire, but as true and helpful friends, admired and loved, who have brought wealth, health, joy, and beauty into the lovely land of Illinois." ²⁸⁵

XIV

CONCLUSION

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I WILL end this earnest attempt to stimulate a deeper interest and induce a more intelligent study of the bird, which has been with me a labor of love, with a few concluding words which I beg my patient reader to consider thoughtfully.

The bird is not only our brother — he is far more. He is our benefactor, our preserver, for the simple reason that he alone is able to hold in check the most powerful race on earth — the insects. It is well known to scientific men that the insect tribes, unchecked, would control the earth. Innumerable, multiplying with a rapidity that defies figures and even comprehension, devouring everything that has, or has had, life, from the vegetable to man, and living but to eat, these myriads would soon, if left to themselves, reduce our planet to a barren wilderness, uninhabitable by man or beast. This fact is so well known that it is unnecessary to go into particulars.

With this power man cannot cope. Nothing that he can do, no engine of destruction that he has been able to devise, has had more than the slightest effect upon this marvelous life. This also is too well known to need proof. Birds and birds alone, spending their lives in unceasing war upon insects, can ensure our safety. Therefore I repeat — and I say it in all seriousness — the bird is not only our brother, he is our benefactor, our preserver.

“The charm of the East,” says a well-known writer of our time, “is a universal sympathy for the animal, a tenderness for all life. The West has its peculiar splendors, but the moral attraction of Asia lies in the sentiment of unity which you feel in a world where man is not divorced from Nature, where animals are ignorant that they have cause to dread the human species.

“Birds come at the Bramin’s call to eat from his hand ; apes on the pagoda roofs sleep in domestic peace, and play with their little ones in as much security as in the bosom of their native forest ; in Cairo turtle-doves live in the midst of the clamor of the city,

and may be seen cooing on the window shutters in the narrow streets, while eagles sleep in confidence on the balconies of the minarets."

APPENDIX



APPENDIX

CITATIONS OF BOOKS AND ARTICLES QUOTED

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4. "A Son of the Marshes:" On Surrey Hills, p. 262.

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14. C. Lloyd Morgan: Habit and Instinct, p. 182.

15. Irene Grosvenor Wheelock: Nestlings of Forest and Marsh, p. 34.

16. Dr. George Harley, F. R. S.: Selborne Letters.

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28. F. W. Headley: The Structure and Life of Birds, p. 328.

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32. Frank Bolles: At the North of Bearcamp Water, pp. 108-110.

33. Dr. George Harley, F. R. S.: Selborne Society Paper, "Why do Wild Birds Shun Human Beings," p. 4.

34. Mrs. Julia Stockton Robins, Secretary Pennsylvania Audubon Society: private letter.

35. Mrs. Eliza Brightwen: Wild Nature won by Kindness, and private letter.

36. Mrs. Freeman, mother of Alice Freeman Palmer, in conversation.

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38. Mary Treat: Home Studies in Nature, pp. 59, 60.

39. Fannie Hardy Eckstorm: The Woodpeckers, pp. 65, 66.

40. Frédéric Houssay : The Industries of Animals, pp. 39, 40.

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The Riverside Press

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